✓ IN BOOK

INPUT®
Systems Operations Program

Vendors

INPUT LIBRARY

CONTENTS

- ✓ Competitive Structure
- ✓ Comparative Analysis
- ✓ Vendor Profiles
- ✓ Questionnaires

JUNE 1991

SYSTEMS OPERATIONS VENDOR ANALYSIS

INPUT LIBRARY

INPUT®

1953 Gallows Road, Suite 560, Vienna, Virginia 22182 (703) 847-6870

Published by
INPUT
1280 Villa Street
Mountain View, CA 94041-1194
U.S.A.

Systems Operations Program (SOP)

Systems Operations: Vendor Analysis

Copyright ©1991 by INPUT. All rights reserved.
Printed in the United States of America.
No part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

SOSP3 • 491 • 1990
SOVA1 • 491 • 1991

Abstract

This report examines competition in the systems operations market in the U.S., based on 1989 revenues and organizational structure. Once included as components of the processing services and professional services markets, INPUT now views systems operations as a separate and major information services delivery mode.

This report is based on a definition of systems operations, where the vendor contracts to perform all or a major portion of an information system operation on a long-term basis, longer than one year.

The report includes a competitive structure for the systems operations market and provides comparative analysis of the classes of vendors within that structure. It includes detailed profiles of the major SO vendors and examines their business objectives, organizations, financial characteristics, strategies, market focuses, and capabilities. The report also identifies and analyzes user trends and issues that provide the driving forces for this market.

Conclusions are drawn about the likely evolution of the market.

© 1991 by INPUT. Reproduction Prohibited.

Table of Contents

I	Introduction	I-1
	A. Objectives	I-2
	B. Scope and Methodology	I-2
	1. Scope	I-2
	2. Methodology	I-2
	C. Report Structure	I-4
	D. Related INPUT Reports	I-4
II	Executive Overview	II-1
	A. Background	II-1
	B. Systems Operations Market Forecast, 1990-1995	II-1
	C. Leading Vertical Industry SO Markets, 1990	II-2
	D. Systems Operations Driving Forces	II-3
	E. Systems Operations Vendor Classification	II-4
	F. Organization/Resource Utilization	II-5
	G. Financial Characteristics	II-6
	H. Vendor Strategies	II-6
	I. Recommendations	II-7
III	Competitive Structure	III-1
	A. Vendor Classification	III-2
	B. Driving Forces	III-4
	1. User Trends and Issues	III-4
	2. Vendor Business Objectives	III-6
	C. Vendor Ranking	III-7
IV	Vendor Profiles	
	A. Andersen Consulting	1/91
	B. Citicorp Information Resources (Now part of FIserv Inc.)	5/91

© 1991 by INPUT. Reproduction Prohibited.

Table of Contents (Continued)

IV	**C.** Computer Task Group, Inc. (CTG)	1/91
	D. Electronic Data Systems (EDS)	1/91
	E. The Genix Group	1/91
	F. McDonnell Douglas Systems Integration Company	5/91
	G. Mellon Bank	1/91
	H. Power Computing Company	1/91
	I. SAIC	1/91
	J. STM Systems Corp.	1/91
	K. Systems & Computer Technology (SCT)	1/91
	L. Systematics, Inc.	5/91
V	Comparative Analysis	V-1
	A. Organization/Responsibilities	V-3
	1. Organization	V-3
	2. Allocation of Resources	V-4
	B. Financial Characteristics	V-5
	1. Leading Competitors' Revenues	V-5
	2. Systems Operations Characteristics	V-6
	3. Profitability and Margins	V-11
	C. Strategies and Markets	V-12
	1. Market Selection	V-12
	2. Contract Cost Distribution	V-13
	3. Sales Activity	V-15
	D. Capabilities and Products	V-16
	1. SO Alliances	V-16
	2. Proprietary Products/Technologies	V-17
	E. Summary	V-18
	1. Organization	V-18
	2. Financial Characteristics	V-18
	3. Market Share	V-19
	4. Internal Capabilities, Alliances	V-19
	5. Capabilities and Products	V-19
VI	Summary and Recommendations	VI-1
	A. Vendor Classification	VI-1
	B. Driving Forces	VI-2
	C. Vendor Organizations	VI-3

© 1991 by INPUT. Reproduction Prohibited.

Table of Contents (Continued)

VI	1. Financial Characteristics	VI-3
	2. Capabilities and Products	VI-3
	D. Vendor Strategies	VI-4
	E. Issues and Trends	VI-6
	F. Recommendations	VI-7
Appendix	Vendor Questionnaire	A-1

© 1991 by INPUT. Reproduction Prohibited.

Exhibits

I	-1 Companies Interviewed	I-3
	-2 Survey Subject Areas	I-3
II	-1 Systems Operations Market, 1990-1995	II-2
	-2 Leading Vertical Industry SO Markets, 1990	II-2
	-3 Systems Operations—Driving Forces	II-3
	-4 Systems Operations Vendor Classification	II-4
	-5 Resource Utilization	II-5
	-6 Vendors' Expectations—Systems Operations Margins	II-6
	-7 Vendor Strategies	II-7
	-8 Recommendations	II-8
III	-1 Market Driving Forces	III-2
	-2 Systems Operations Vendor Classifications	III-3
	-3 Major Buyer Issues—1990	III-5
	-4 Market Trends	III-6
	-5 Performance Incentives for Management	III-7
	-6 Leading Systems Operations Vendors, 1989	III-8
IV	Andersen Consulting (AC)	
	-1 Market Characteristics	2
	-2 Distribution of Revenue	3
	-3 Capabilities	4
	Citicorp Information Resources (Now part of FIserv Inc.)	
	-1 Market Characteristics	2
	-2 Organization Chart	4
	-3 Capabilities	5
	Computer Task Group, Inc. (CTG)	
	-1 Market Characteristics	3
	-2 Distribution of Revenue	3
	-3 Capabilities	4

© 1991 by INPUT. Reproduction Prohibited.

Exhibits (Continued)

IV

Electronic Data Systems (EDS)
-1 Major Competitors in Each Market Sector 4
-2 Organization Chart 6
-3 Capabilities 7
-4 Sources of New Business 9

The Genix Group
-1 Market Characteristics 2
-2 Distribution of Revenue 3
-3 Capabilities 3

McDonnell Douglas Systems Integration Company
-1 Market Characteristics 2
-2 Distribution of Revenue 3
-3 Capabilities 4

Mellon Bank
-1 Market Characteristics 2
-2 Distribution of Revenue 2
-3 Capabilities 4

Power Computing Company
-1 Market Characteristics 2
-2 Distribution of Revenue 3
-3 Capabilities 4

SAIC
-1 Capabilities 2
-2 Organization Chart 4

STM Systems Corp.
-1 Market Characteristics 2
-2 Distribution of Revenue 4
-3 Capabilities 4

Systems & Computer Technology
-1 Market Characteristics 2
-2 Distribution of Revenue 3
-3 Capabilities 4

© 1991 by INPUT. Reproduction Prohibited.

Exhibits (Continued)

IV		Systematics, Inc.	
	-1	Market Characteristics	2
	-2	Distribution of Revenue	3
	-3	Organization Chart	6
V	-1	Systems Operation Respondents—Distribution by Class	V-1
	-2	Years in Systems Operations Business	V-2
	-3	Contract Duration	V-3
	-4	Resource Utilization	V-5
	-5	Survey Sample Project Sizes	V-6
	-6	Revenue Distribution	V-6
	-7	Equipment Ownership Revenue Distribution—1989 versus 1992	V-7
	-8	Equipment Location Revenue Distribution—1989 versus 1992	V-9
	-9	Equipment Use Revenue Distribution—1989 versus 1992	V-10
	-10	Application Software Revenue Distribution—1989 versus 1992	V-11
	-11	Vendors' Expectations—Systems Operations Margins	V-12
	-12	Systems Operations Vendors' Market Focus	V-13
	-13	Cost Distribution	V-14
	-14	Systems Operations Pricing Alternatives	V-14
	-15	Sales Activity	V-15
	-16	Vendor Capabilities and Alliances	V-16
	-17	Use of Proprietary Technology/ Products/Services	V-17
VI	-1	Vendor Classifications	VI-1
	-2	Resource Allocation	VI-4
	-3	Vendor Strategies	VI-5
	-4	Alliances Provide Capabilities	VI-5
	-5	Major Buyer Issues—1990	VI-6
	-6	Recommendations	VI-8

© 1991 by INPUT. Reproduction Prohibited.

Introduction

The systems operations market has emerged as one of the strongest growth markets in the information services industry in the last two years. Changes in vendor relationship to users, rapid acceleration in technology improvements, and changes in the economic conditions of U.S. business have all had an effect on the systems operations market.

The relationship of vendors to users began changing when buyers looked to vendors for systems integration help to take advantage of new technology more rapidly. Clients became more willing to entrust their major projects to third parties. Vendors successfully demonstrated they could provide expertise that many firms could not maintain in-house.

Some of these systems integration projects led inevitably to systems operations contracts. When the vendor had done a good job of developing and implementing the new system, the client believed the vendor should be able to provide ongoing systems operations also. Early success in outsourcing operations in these cases made the concept of systems operations—where the vendor provides the services previously provided by the in-house staff—more acceptable to companies that had not considered it before.

Outsourcing solved other major client problems also. Clients were losing the race to keep up with technology changes and to maintain the level and quality of staff required, particularly in light of this ever-changing technology. This was especially true in the federal government and in industries with narrowing profit margins.

These two factors alone would have stimulated the demand for outsourcing of systems operations, but the recent downturn in economic conditions has heightened the need for many companies to reduce their information services expenses. Many companies have also recently undergone transition in their information service demands because of mergers and acquisitions.

© 1991 by INPUT. Reproduction Prohibited.

A

Objectives

INPUT has been closely watching these trends and directions, and presents this report to examine the competitive structure of the systems operations market. The report analyzes the current vendors' activities in the marketplace, projects emerging trends among vendors, and reviews systems operations issues.

The primary objective of this report is to present an accurate analysis of the competitive structure of the market for systems operations. To this end, the following goals have been established for this report:

- Identify the leading vendors in the systems operations marketplace today
- Examine the origins of the leading vendors and how their roots affect their strategies in this marketplace
- Describe how systems operations are being offered and what the trends are in delivery modes
- Project how the leading vendors will behave in the market in the next three years
- Identify emerging vendors and the markets in which they will most likely participate.

B

Scope and Methodology

1. Scope

This report examines the activity in the U.S. commercial and federal systems operations markets. The vendors profiled represent both multi-industry vendors and some who have chosen to concentrate their activities in only one or two vertical markets.

2. Methodology

To examine how vendors are dealing with the emerging SO market, INPUT conducted a survey of 13 executives in systems operations companies. The list of companies is contained in Exhibit I-1.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT I-1

Companies Interviewed

Company Type	Company Name
Hardware Manufacturer	Digital Equipment
Equipment Services	Andersen Consulting Computer Task Group SAIC McDonnell Douglas
Processing Services	EDS Systematics Genix Group Power Computing STM Systems Corp. Systems & Computer Technology
Other	Citicorp Mellon Bank

The topics that were examined are outlined in Exhibit I-2. The results of the survey and discussions are a series of individual vendor profiles that are included in this report. As part of INPUT's continuing Systems Operations Program, additional interviews will be conducted, and profiles of additional companies will be added to this report.

EXHIBIT I-2

Survey Subject Areas

- Background
- Organization/responsibilities
- Customer Base
- Financial Characteristics
- Strategy and Markets

© 1991 by INPUT. Reproduction Prohibited.

In addition to the individual profiles, the information gathered in the survey process was aggregated and analyzed to identify trends and issues relevant to the market.

C

Report Structure

This report is organized in the following manner:

- Chapter I, Introduction, acquaints the reader with the objectives of the report and outlines what is to follow.
- Chapter II, the Executive Overview, provides a summary of the contents of the entire report.
- Chapter III, Competitive Structure, groups vendors participating in the systems operations market into four classes based on their primary businesses. It also identifies forces that are driving the systems operations market and identifies the leading vendors in this market.
- Chapter IV, Vendor Profiles, contains the profiles for individual vendors. Additional profiles, as they are developed by the INPUT staff, will be sent to SO program clients for insertion in this report.
- Chapter V, Comparative Analysis, summarizes the strategies, capabilities, and offerings of the various market participants and compares them by vendor class.
- Chapter VI, Summary and Conclusions, presents INPUT's summary of the market conditions and some recommendations for operating in this growing marketplace.
- Appendix A contains the vendor questionnaire used to obtain much of the research information used in this report:

D

Related INPUT Reports

For a complete view of the information services market, readers are encouraged to review the following INPUT reports:

Information Services Industry Reports—
Industry-Specific and Cross-Industry Markets (1990)

For a further look at the systems operations market, readers are directed to the following INPUT reports:

Systems Operations—Growth for the 1990s (1989)

© 1991 by INPUT. Reproduction Prohibited.

Systems Operations—Management Issues and Practices	(1990)
Systems Operations Market Analysis, 1990-1995	(1990)
Federal Processing Services/Systems Operations Market, 1989-1994	(1988)
Network Operations Management	(1990)

Those interested in details on the systems integration market are directed to the following additional INPUT reports:

Systems Integration Market Analysis, 1990-1995	(1990)
Network Integration—A Growing Market	(1990)
U.S. CIM Systems Integration Markets	(1990)

© 1991 by INPUT. Reproduction Prohibited.

© 1991 by INPUT. Reproduction Prohibited.

II

Executive Overview

A

Background

This report examines competition in the systems operations market. Only a few years ago there was serious question as to whether the facilities management business had significant growth potential.

During the last two years, for a number of reasons that will be described later in this summary, there has been a renewed interest in a new form of this service, which INPUT calls systems operations (SO). Under systems operations, services vendors take full responsibility for the planning, management, operations, and control of the user's information systems.

The objectives of this research and the resulting report are to present a current and accurate analysis of the competitive structure of the market, to examine the capabilities and strategies of key players, and to identify key trends and issues that will impact the position and strategies of vendors over the next five years. Thirteen vendors participated in this study.

INPUT has been tracking the development of the systems operations market for several years. Prior to 1990, INPUT tracked the systems operations market as two delivery submodes of the processing services and professional services delivery modes. In 1989, it became apparent that systems operations was becoming much more important, and INPUT established it as a separate delivery mode in 1990—one of eight that INPUT tracks. This vendor analysis report is the first that deals only with systems operations vendors.

B

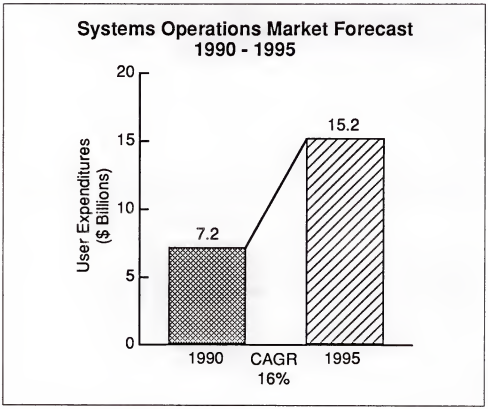
Systems Operations Market Forecast, 1990-1995

In 1990, systems operations revenues reached $7.2 billion for all segments of the U.S. market, representing 7.2% of the $100.6 billion information services industry. INPUT believes that for the period 1990 to 1995, systems operations is the third fastest growing information services delivery mode, with a 16% compound annual growth rate (CAGR). It trails only systems integration, with a CAGR of 19%, and network

© 1991 by INPUT. Reproduction Prohibited.

services with a CAGR of 17%, and is growing two percentage points faster than the entire information services industry, forecasted to grow at a CAGR of 14%. Exhibit II-1 presents the forecast for the systems operations market for 1990 to 1995.

EXHIBIT II-1



C

Leading Vertical Industry SO Markets, 1990

A detailed analysis of the systems operations market by 16 vertical industry markets is available in the INPUT report, *U.S. Systems Operations Markets, 1990-1995*. The banking and finance industry is the largest vertical market for systems operations in 1990, as shown in Exhibit II-2, where the next four vertical markets are also identified.

EXHIBIT II-2

Leading Vertical Industry SO Markets, 1990

Vertical Industry	1990 User Expenditures ($ Billions)
Banking and Finance	1.9
Federal Government	1.3
State and Local Government	1.0
Medical	0.8
Insurance	0.8

©1991 by INPUT. Reproduction Prohibited.

D

Systems Operations Driving Forces

It is important to recognize the driving forces of the systems operations market. They are identified in Exhibit II-3.

Skilled information systems personnel are becoming harder to acquire and more difficult to retain. Certain industries, because of their depressed wage structures, are finding it difficult to attract personnel. Others are finding staff with certain skills in short supply, particularly those with communications technology expertise. By using outside vendors, existing expertise is leveraged across several clients.

Corporate management has become concerned that much of its attention and energy is being diverted to information systems problems when it should be focused on more fundamental operational problems. It's a dilemma for management, since most executives recognize the importance of information systems to the health of their business, yet do not understand the technology or how to manage its day-to-day operations. INPUT believes that more will decide to entrust systems operations, and in some cases systems development and maintenance, to outside experts as information technology continues to increase in complexity.

EXHIBIT II-3

Systems Operations—Driving Forces

- Lack of skilled personnel
- Management focus on core business
- Need to preserve capital/reduce expenses

Coupled with the demands of rapidly changing technology, management is increasingly under pressure to preserve capital and reduce expenses. Shrinking margins in many commercial industries, changing demand patterns for goods, reduced budgets in the government sectors, and a general slowdown in the economy are all affecting the availability of funds. The restrictions on new spending add to the pressure to do more with existing funds. Under these conditions, the economies of scale and leveraging of resources offered by systems operations vendors become very attractive.

These fundamental trends are translating into an accelerated demand for systems operations. Many executives across the broad range of vertical industry markets are asking their information systems executives to examine systems operations for applicability to their businesses.

© 1991 by INPUT. Reproduction Prohibited.

E

Systems Operations Vendor Classification

Examination of the vendors' backgrounds and analysis of the data identified correlates between the overall classes of vendors and their general approaches to the SO business. INPUT established the four classes of vendors, identified in Exhibit II-4 and discussed below:

EXHIBIT II-4

Systems Operations Vendor Classification

- Professional Services Firms
- Processing Services Firms
- Equipment Manufacturers
- Other Vendors

- Professional services firms have entered the systems operations business either as an outgrowth of their systems integration business or as a follow-on to other professional services engagements where they were providing personnel to develop or maintain applications software or to operate existing hardware.

- Processing services companies are looking for new markets since the introduction of the personal computer and departmental computing destroyed most of the demand for their timesharing services. While other forms of remote processing services supplemented some of these losses, systems operations offers opportunities for exciting new growth.

- Equipment manufacturers developed a renewed interest in the systems operations business over the last two years as they saw the other SO segments begin to penetrate their client bases. They recognize that SO can provide new sources of revenue and profits as equipment margins fall, but also understand that they must participate to protect distribution channels for their traditional products.

- A group of "other" vendors emerged that are also participating in the SO market. These companies developed superior operating procedures internally and are applying that experience, strong vertical market knowledge, and excess internal capacity to generate revenue.

© 1991 by INPUT. Reproduction Prohibited.

F

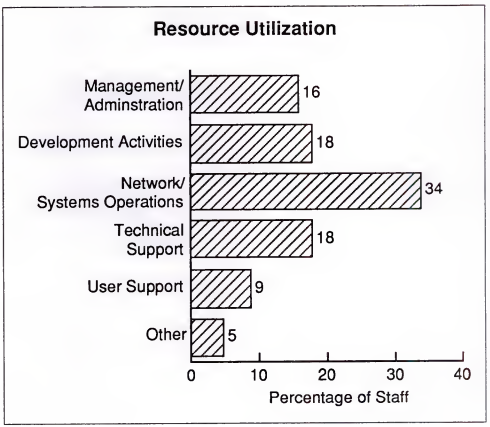
Organization/Resource Utilization

The organizations of the 13 systems operations companies studied varied. Most of the processing services firms that participated in the survey are independent or wholly owned companies whose primary business is SO. The remainder of the companies that come from the other segments generally operate as divisions of their parent organizations.

Within the organizations, resources are generally distributed as shown in Exhibit II-5. As might be expected, the majority of the resources are assigned to network and systems operations and technical and user support.

Almost 20% of the resources are devoted to application and network design and development. A growing number of SO vendors are expanding their services into applications and network development and maintenance activities. This supports the notion that users are looking for and vendors are selling expanded information services outsourcing services.

EXHIBIT II-5



© 1991 by INPUT. Reproduction Prohibited.

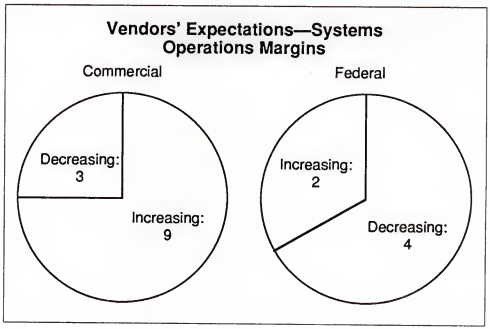
G

Financial Characteristics

While large systems operations contracts receive much publicity, the majority of SO contracts are relatively small. Nine of the 13 vendors surveyed provided data on over 1,200 contracts. Average annual revenues for these contracts were $1.5 million, and most were from three to eight years in length.

Most vendors would not divulge details on systems operations margins. Those who did indicated that before-tax margins were in the range of 8% to 12%. As shown in Exhibit II-6, most vendors thought that commercial margins are improving, and four out of six thought federal margins were decreasing.

EXHIBIT II-6



H

Vendor Strategies

A number of vendor strategies are summarized in Exhibit II-7. They have evolved as a result of market conditions and user requirements. INPUT has identified them through this and a number of other systems operations studies.

Early targets for systems operations vendors were companies in transition. These can be fast growing companies or, in the trying economic times of the 1990s, companies that are under organizational or financial stress. They can be companies experiencing divestiture or going through consolidations.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT II-7

The market is moving toward one where users are asking for and vendors are providing a full set of services, from business consulting to systems integration and then systems operations. The hardware vendors and larger professional services and processing services firms are implementing this strategy to accommodate their clients and provide an additional source of revenue. Vendors that lack all of the resources to satisfy this customer requirement, are establishing alliances to provide the perception that they are full-service vendors. Even the largest vendors are using alliances to add services that they may not offer, or where they lack cost-effective expertise.

Vendors are investing in their clients' businesses. They are investing through building facilities on their customers' sites, by buying new equipment and software technology and in some cases by taking equity positions in the clients' businesses. This is requiring both partners to see their relationship more as a partnership than a contract. This is a fundamental change for vendor and client and requires the skills and willingness to manage the relationship accordingly.

I Recommendations

The systems operations market continues to grow at an attractive rate. Many of the early participants have been successful, and new participants are being attracted by the need to protect existing client relationships and the opportunity to leverage existing relationships and resources.

This market will require vendors to operate in creative ways, as shown in Exhibit II-8.

© 1991 by INPUT. Reproduction Prohibited.

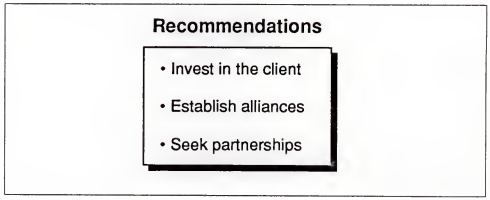
- Vendors should be prepared to assume more financial risks and invest in their clients. These investments can take the form of equipment and software technology, or even facilities, in or near clients' sites. In addition, it may be necessary to invest in the prospective clients' businesses. Access to investment capital will be essential to grow with the systems operations market.

- Few vendors have all the resources and capabilities to meet evolving systems operations clients' needs. Vendors should take steps to supplement existing capabilities with alliances that allow them to provide a broad range of competitive services and present a full-service vendor image.

- Prospective clients are looking for more than service suppliers. They are looking for vendors who will enter into a long-term partnership with them, and who are committed to their (the clients') success. Vendors need to learn how to be partners with their clients.

Vendors who master these changes in operating style will improve their odds of competing successfully in this growing information services market.

EXHIBIT II-8



© 1991 by INPUT. Reproduction Prohibited.

III

INPUT LIBRARY

Competitive Structure

The systems operations market is emerging as one of the growth markets in the 1990s. A number of well recognized and respected U.S. companies have selected outside vendors to operate their information processing centers. At the same time, vendors, recognizing the potential, are positioning themselves to participate in this new and growing market.

To assist in analyzing and understanding motivations and behavior, INPUT has classified vendors into four groups:

- Professional services firms have naturally entered the market either as a follow-on to consulting, program development, or systems integration activities, or as a natural outgrowth of other professional services engagements where they were providing personnel to operate client-owned and -managed data centers.

- Processing services companies began looking for new markets when their traditional timesharing business was rapidly eroded by increased PC usage and increases in departmental computing. While remote processing services supplemented some of these losses, system operations offered opportunities for exciting new growth.

- Hardware manufacturers are newer arrivals in the systems operations market that see it as a required strategy to provide a broader range of services to their clients and, in the process, protect their channels of equipment distribution.

- "Other" companies have seen the systems operations market as a means of leveraging their in-house base of expertise and equipment by expanding the services they provide to other companies, often ones in their own market segment. While the "other" companies included in this initial study are banks, firms from other industry sectors also participate in the systems operations market.

© 1991 by INPUT. Reproduction Prohibited.

The market driving forces of all of the groups are summarized in Exhibit III-1. Vendors want to leverage the expertise they have acquired into profitable ventures. They are attempting to maximize the productivity of in-house resources by spreading their use over a number of clients, some internal and many external, generating revenue and profit from the external clients.

EXHIBIT III-1

Market Driving Forces
• Maximize industry or functional expertise
• Protect distribution/client channels
• Meet developing client needs

Certain vendors, in particular the equipment manufacturers and the professional services firms, also need to protect their distribution channels and retain strong ties with their current client base.

Finally, the systems operations vendors, like all good suppliers, need to respond to customer needs. Internal information systems organizations are increasingly turning to outsourcing as a solution for a number of problems. Vendors need the resources in place to meet these needs.

A Vendor Classification

The vendor mix in this marketplace contains many of the same information services vendors found in other market segments. In fact, the entry into the systems operations market is often a function of what those vendors were previously doing for clients. Exhibit III-2 lists a representative sampling of vendors.

There are both veterans and newcomers in this list of vendors. Perot Systems and Affiliated Computer Systems are relatively new companies—with veterans at the helm—that have grown rapidly. EDS and CSC have been market leaders in their fields for many years, and they continue to be. The equipment giants, DEC and IBM, are still newcomers in the systems operations arena. Both recently announced major restructuring plans to better position themselves in the marketplace.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT III-2

Systems Operations Vendor Classifications

Category	Companies
Professional Services	Andersen Consulting Computer Task Group SAIC Computer Sciences Corp. Perot Systems McDonnell Douglas Systemhouse
Processing Services	EDS Systematics Power Computing Genix Group STM Securities Industry Automation Corporation Shared Medical Systems SCT Affiliated Computer Systems Boeing Computer Services
Equipment Manufacturers	IBM DEC Unisys CDC
"Other" Companies	Mellon Bank Citicorp FMC Corporation

Mellon Bank and Citicorp, the two banks identified in the exhibit that offer systems operations services, were unexpected competitors for Systematics, a company that has provided processing services and software to the banking community for 22 years. Other companies, such as BCS and Unisys, are reorienting or reorganizing their businesses. Boeing has gotten out of the commercial business altogether, and Unisys recently changed its reporting structure so that commercial activities are now reporting to the executive who manages Unisys' involvement in the federal government.

© 1991 by INPUT. Reproduction Prohibited.

No discussion of the systems operations marketplace would be complete without a reference to the relative importance of the federal segment of the market. Federal agencies were among the first organizations to turn to vendors for the management of data processing operations, because of staff shortages and congressional directives. Some of the industry veterans, EDS and CSC, gained important experience in this segment. Many of the vendors still derive more than 50% of their revenues from that client base. Yet INPUT projects the commercial segment of the market to grow at a 17% rate over the 1990-1995 period, while the federal government segment will only grow at a 10% CAGR.

B

Driving Forces

Vendors trying to position themselves in the systems operations market will have to consider both user motivations and the market structure itself.

To be successful, a vendor will have to adjust its approach to the market to fully respond to user needs while leveraging the resources at its disposal. The major issues and trends that have been identified by executives in user firms represent one set of driving forces. What vendors consider to be their business objectives comprise the opposing forces.

1. User Trends and Issues

The buyer issues listed in Exhibit III-3 have been identified by executives in user firms as the motivators for growth in systems operations. Many information services executives are finding that outsourcing to systems operations vendors is a viable alternative to operating information processing with internal resources.

Management realizes that information services are the key to success in most industries. They emphasize that they need to have information on markets, sales, and production status to compete in today's marketplace.

Shrinking margins in many industries, a change in the demand pattern for goods, and a slowdown in the economy are all affecting the availability of funds. The restrictions on new spending only add to the pressures to do more with existing resources. Once again, the economies of scale and the leveraging of resources offered by systems operations vendors become even more attractive.

Some firms are becoming more and more troubled by the fast changes in technology they must assimilate. This is another area management wants to turn over to experts to minimize the time devoted to tracking technology. They prefer to rely on vendors to keep current with the state of technology. User management believes that vendors have strong profit incentives to improve their own operating efficiency.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT III-3

Major Buyer Issues—1990

- Information systems key to business success
- Need to reduce operating costs/preserve capital
- Challenge to keep abreast of technology
- Lack of skilled personnel
- Concern about dependency on vendor

As business conditions change, companies also need to change rapidly. An example is the rapid constriction of the oil drilling industry and its subsequent effect on staff and budgets. Many firms in that sector turned to systems operations firms to eliminate large data centers they no longer needed. These same firms merged and downsized, and found they needed to preserve capital or improve cash flow rapidly.

Skilled information services personnel are becoming harder to acquire and more difficult to retain. Certain industries, in particular, are finding it difficult to attract personnel because of their depressed wage structures. Others are finding staff with experience in certain disciplines in short supply, particularly those with communications technology expertise. By using outside vendors, existing expertise can be leveraged across several clients.

Corporate management is becoming concerned that much of its attention and energy is being diverted to information systems problems when it should be focusing on more fundamental, core-business-related operational issues. It is a dilemma, since most executives recognize the importance of information systems to the health of their businesses, yet don't understand the technology or the way to manage that part of the operation. INPUT believes more will decide to entrust systems operations to outside experts, as information technology continues to increase in complexity.

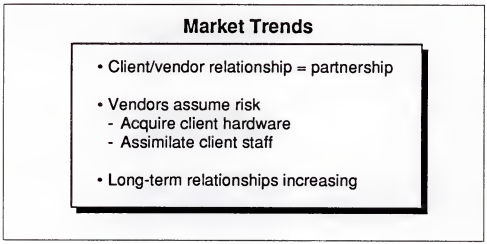
Outsourcing of systems operations requires turning over all data processing operations to a third party. It leaves the buying firm dependent on an outside vendor for information it has already judged to be crucial to its continued successful operation, which is of some concern to the buying firm. If systems operations is to be selected as an alternative, vendors need to address this concern.

© 1991 by INPUT. Reproduction Prohibited.

Several trends are developing in the systems operations market, which are outlined in Exhibit III-4. The concept of a partnership is becoming accepted as vendors and users negotiate how the process will work. As vendors invest in equipment and facilities for the client, and assume responsibilities for staff over an extended contract period, mutual respect and trust will be required.

The partnership concept will solidify as more vendors assume responsibility for hardware and staff that currently are client-owned and reside on client premises.

EXHIBIT III-4



The relationship between vendor and client is also becoming a long-term one. Contracts for more than five years are common already, and ten years' duration for larger contracts.

2. Vendor Business Objectives

The primary objective of any systems operations vendor is of course to be profitable. INPUT asked systems operations vendors what performance incentives they established for their management team. Exhibit III-5 lists the top five criteria used by systems operations vendors to measure success.

As expected, management motivates its systems operations executives to be profitable. The equal weight assigned to staff productivity is essentially another vote for profitability. If the staff maintains high productivity, operating margins can be maintained or will improve. This is particularly important in view of another finding from INPUT's vendor survey. Most of the respondents stated they expect operating margins to shrink in the federal sector; for the commercial sector, responses were mixed. Three respondents foresee shrinking margins and five expect them to increase.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT III-5

Performance Incentives for Management

Criteria	Rank
Profitability	1
Staff Productivity	1
Client Satisfaction	2
Customer Relations	3
System Performance	3

Close behind is the recognized need to keep the clients happy, and management reports that it rewards those executives who do that effectively. Since many vendors view systems operations as a means to protect their more traditional product channels (equipment and software), it is imperative that they maintain their reputation with existing customers.

There is no better way to keep the client happy than to keep the system he interfaces with operating smoothly . There is no better way to improve operating efficiency than to fine tune the system performance.

In summary, the respondents really had two objectives in mind in establishing performance criteria for their management: profitablility and client satisfaction.

C

Vendor Ranking

Vendors who participate in systems operations usually follow one of two strategies. They either focus on a single vertical industry market or provide services to a number of industry markets.

A look at the vendor market share is presented in Exhibit III-6. To be a dominant vendor, it helps to be a multi-industry vendor; but there is opportunity for an industry specialist to capture a significant share of revenue. Both Electronic Data Systems (EDS) and Computer Sciences Corporation (CSC) are active across several industries. Boeing Computer Services (BCS) obtains most of its revenues from the federal market, but EDS is much more widely dispersed.

The other firms on the list specialize in one or two industries only, and have demonstrated good stability within their respective markets. The market is populated by a large number of additional firms, most specializing in one or two industries or with systems operations as a minor activity.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT III-6

Leading Systems Operations Vendors, 1989

Vendor	Market Share (%)
Electronic Data Systems	16
Computer Sciences Corporation	5
Systematics	3
Affiliated Computing Services	3
Shared Medical Systems	2
Securities Industry Automation Corporation	2
Boeing Computer Services	2

A market in which the leading vendor controls 16% of the revenue and 33% of the revenues are controlled by seven vendors is a healthy environment offering plenty of opportunity for new vendors. INPUT believes that the users will strongly shape the market in the near future as they begin to relinquish control over their own information services operations to concentrate on their core businesses and reduce operating expenses. They will select vendors that demonstrate strong management skills, offer cost-effective proposals, and are willing to establish a long-term partnership where client and vendor are winners.

© 1991 by INPUT. Reproduction Prohibited.

Comparative Analysis

INPUT LIBRARY

This chapter compares the vendors regarding a variety of factors, including:

- Organization/responsibilities
- Financial characteristics
- Strategies and markets
- Capabilities and products

A total of 13 vendors responded to INPUT's Systems Operations (SO) questionnaire. In Exhibit V-1, they are classified into four groups. This classification will be used later in this chapter to compare some company characteristics and strategies.

EXHIBIT V-1

Systems Operations Respondents Distribution by Class

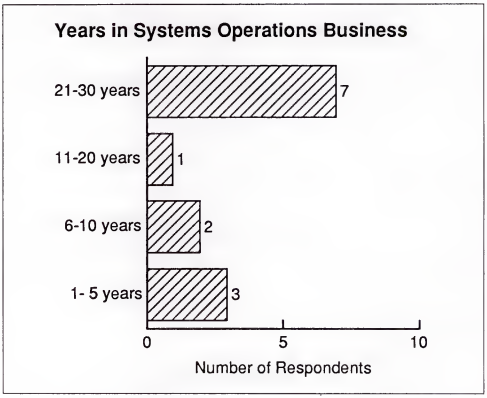
Number	Companies	Classification
4	Professional services	Andersen Consulting, CTG, SAIC, McDonnell Douglas
6	Processing services	EDS, Systematics, Genix Group, Power Computing, STM, SCT
1	Hardware manufacturer	DEC
2	"Other"	Mellon Bank, Citicorp

© 1991 by INPUT. Reproduction Prohibited.

Six vendors provide service to only commercial clients, one vendor provides service exclusively to federal clients, and six vendors provide both commercial and federal systems operations services.

It is interesting to note that, collectively, these companies have a total of over 224 years experience with commercial projects, and 150 years experience in the federal marketplace. Over one-half of the vendors profiled are established firms with more than 20 years of SO experience. Exhibit V-2 shows the number of years in the systems operations business among respondents.

EXHIBIT V-2

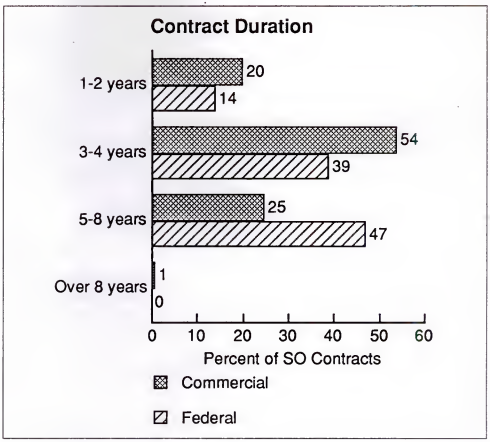


Almost 75% of the commercial SO contracts serviced by these vendors have durations of less than four years. Slightly less than 50% of federal contracts are long term, within the range of five to eight years. Exhibit V-3 shows the duration of contracts. These findings were somewhat surprising in that most recent commercial contracts are publicized as being 10 years long. INPUT believes that future contracts will be longer in duration, particularly as vendors begin to invest more in equipment and facilities and commit to fixed-price contracts.

Vendors provided the total number of data centers for which systems operations services are provided. A total of 97 client-owned data centers were reported. There were significantly more vendor-owned data centers, with a total of 232.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-3



The data on the number of vendor-owned data centers should be viewed carefully, as there are two strategies that vendors use. With the first strategy, the vendor develops very large data centers to be shared among multiple clients. This strategy is designed to improve productivity, gain advantages from economies of scale, and provide very low operating rates.

With the second strategy, the vendor owns a data center on or near the client's location which, in many cases, is dedicated to that one client's work. Both of these strategies are viable and competitive, since they are driven by client as well as vendor preference.

A

Organization/ Responsibilities

1. Organization

The organizations of the systems operations firms studied vary. In some cases, the systems operations unit functions as a subsidiary or separate division that reports to its parent company. However, most of the processing services vendors that responded to INPUT's questionnaire are independent or wholly owned companies.

© 1991 by INPUT. Reproduction Prohibited.

Only one of the vendors reported having separate, independent divisions for managing and providing commercial and federal systems services. All other companies provide both commercial and federal SO service through a single organizational structure.

Nine out of 13 vendors told INPUT the total number of their full-time systems operations staff. The companies range in size from 150 employees—the smallest—to over 16,600 employees—the largest. Seventy-eight percent of the 23,195 full-time employees identified in the study are allocated to commercial SO clients.

2. Allocation of Resources

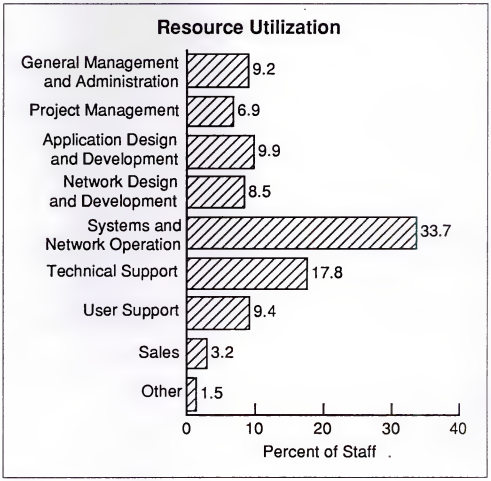
There are key staff capabilities that are required by systems operations firms. In general, the professional services companies allocate more resources to administering and managing projects. This probably results from the fact that professional service companies frequently are involved in pre-engagement consulting during the problem identification phase of SO efforts. The other classes of vendors more often find themselves responding to bids, not creating them. This up-front consulting capability is a strong leveraging point for the professional services firms.

In contrast, processing services firms allocate more of their resources to application and network design and development and technical support expertise—in effect, focusing their resources on the implementation end of the project life cycle.

All of the firms displayed a strong emphasis in the areas of systems and network operations, as well as technical support. All vendors allocated the bulk of their SO resources to supporting systems and network operations. The percentage distribution of personnel for all major systems operations for the combined 13 companies' functions is illustrated in Exhibit V-4.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-4



B

Financial Characteristics

1. Leading Competitors' Revenues

Although INPUT was only able to obtain specific project data from a limited number of respondents, the results are consistent with those obtained from analyzing INPUT's systems operations project data base. That is, the majority of the commercial projects in the market have an average annual value of $1.5 million. INPUT excluded values for the federal market due to a lack of sufficient sample size. Exhibit V-5 illustrates the findings.

In general, the companies profiled reported that between 80% and 83% of their 1990 revenue came from existing clients, with the remainder from new accounts. There were minor variations between established companies, with new entrants in the SO market deriving a more significant portion of business from new accounts. Exhibit V-6 illustrates the source of current-year revenue.

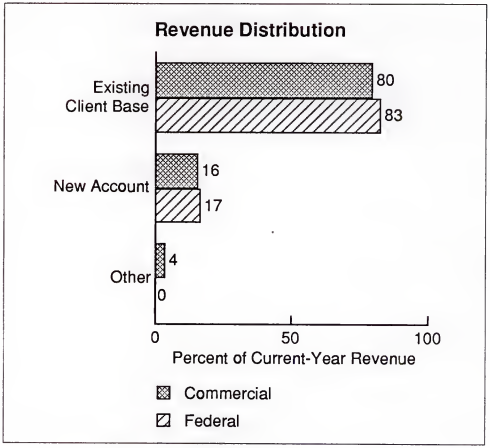
© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-5

Survey Sample Project Sizes

Type of Project	Number of Projects	Total Annual Contract Value ($ B)	Average Annual Value ($ M)
Commercial	1,293	1.9	1.5

EXHIBIT V-6



2. Systems Operations Characteristics

There are a number of characteristics that describe a vendor's systems operations business. One might be the percentage of total revenue a firm derives from systems operations on equipment it owns versus on equipment the client owns. INPUT requested each vendor to indicate 1989 actual revenue and 1992 expected revenue, in percentage, for the alternatives listed below:

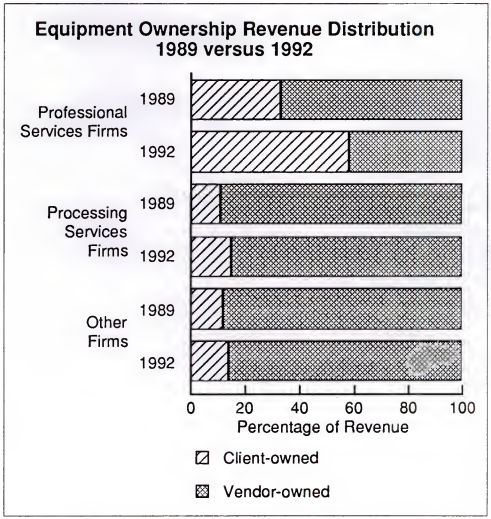
© 1991 by INPUT. Reproduction Prohibited.

- Equipment owned by client/vendor
- Operations located on client premises/vendor facility
- Equipment dedicated to a single client/shared among clients
- Application software developed by client/vendor/third party

The analysis and discussion of the following four exhibits, V-7 through V-10, do not include EDS or Digital; these companies refrained from answering this series of questions. Hardware vendors are omitted from these exhibits and this analysis because only one hardware vendor responded to INPUT's survey.

Exhibit V-7 shows the distribution of 1989 and 1992 revenue based on equipment ownership.

EXHIBIT V-7



In 1989, the professional services vendors realized two-thirds of their revenues from equipment they owned and one-third from equipment owned by their clients. In contrast, the processing services vendors and

© 1991 by INPUT. Reproduction Prohibited.

"other" vendors realized almost 90% of their revenues from their own equipment.

In 1992, processing services and "other" vendors expect slight to no change in revenues distribution based on equipment ownership; professional services firms expect significantly higher revenues from client-owned equipment in 1992. Professional services firms have limited access to capital and prefer to engage in systems operations contracts where the vendor provides the equipment. They will emphasize this focus even more in 1992.

The second characteristic studied is the location of the systems operations service. Exhibit V-8 illustrates the distribution of 1989 and 1992 revenues from equipment located at client premises and vendor sites. In 1989 processing services firms derived almost two-thirds of their revenues from operations on the client's site. This will remain fairly constant through 1992, as will the roughly 50-50 split of the "other" firms. The most significant change will be in the professional services firms, which expect to add more customer premise business by 1992.

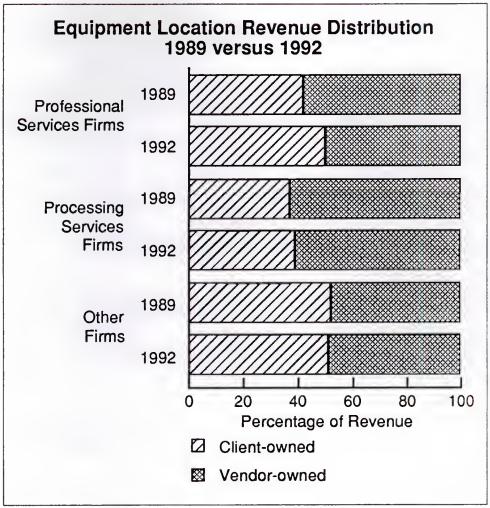
Overall, the mix for all three classifications includes more customer-site business. While at first this seems surprising, INPUT believes that this is a recognition that more large companies will be moving to systems operations. As they do, they will request, and vendors will provide, services on the client's site. IBM's recent large awards at Kodak and Bank South are good examples of this.

The third characteristic studied is the allocation of equipment. Exhibit V-9 shows the distribution of 1989 and 1992 revenue derived from dedicated versus shared equipment resources.

The processing services vendors and "other" vendors realized about 50% of 1989 revenue from equipment dedicated to single clients. The professional services firms realized two-thirds of 1989 revenues from equipment shared among multiple clients.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-8

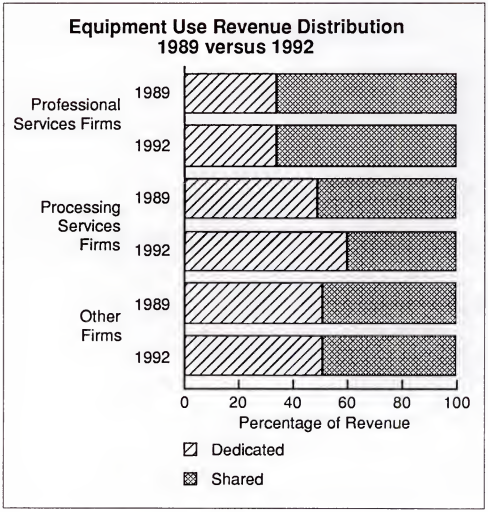


In 1992, the professional services and "other" firms expect little change in this distribution. Processing services firms expect an increase in revenue derived from equipment dedicated to single clients. Once again, the move of larger companies to systems operations explains this change.

The final characteristic studied identifies the distribution of revenue from the operation of applications software developed by the client, vendor, or a third party, as illustrated in Exhibit V-10. The three classes of vendors differ in the source of the applications software they run for their clients. Over 50% of the professional services firms' revenues are generated from running client-developed applications. This is quite different from the "other" firms, which, typically, specialize in a vertical industry and have developed or acquired industry-specific applications programs which account for over 90% of their revenue.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-9

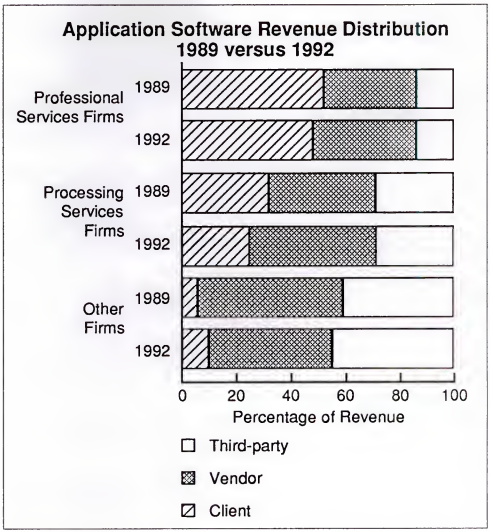


Between these two classes are the processing services companies, some of which have the same characteristics as the "other" firms, in that they specialize in a vertical industry.

In 1992, the "other" firms anticipate generating a little more revenue from client-developed applications, while both the processing and professional services class will add more vendor-developed applications revenue. The latter represents an important trend toward industry specialization and industry-specific solutions.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-10



3. Profitability and Margins

Although the majority of the companies who responded to the vendor questionnaire were not willing to disclose the profit margins of their SO businesses, those who did indicated the before-tax profit margins were in the range of 8% to 12%.

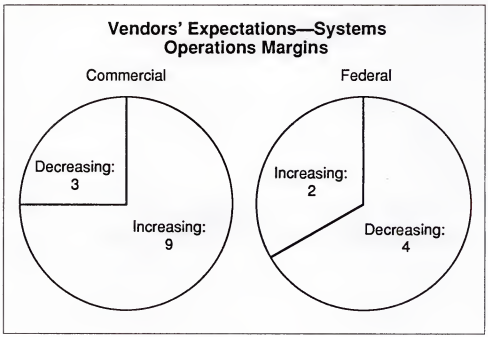
The respondents cited two reasons for these margins: Pressures are reducing the number of opportunities available, and these same pressures are making the market more competitive and less profitable.

Exhibit V-11 illustrates the vendors' expectations for the SO margins.

Vendors provided INPUT with their estimates of the compound annual growth rate (CAGR) for the systems operations industry over the next five years. All but one vendor responded, resulting in an average CAGR of 19% for commercial systems operations and a CAGR of 11% for federal systems operations.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-11



C

Strategies and Markets

1. Market Selection

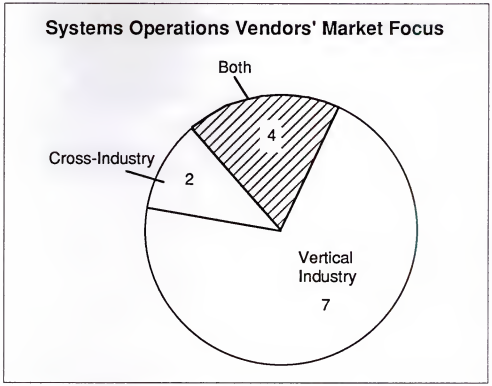
Although the reasons may vary, it is very clear from the survey results that the majority of vendors have, or are in the process of developing a strong vertical-industry focus. Of 13 vendors, seven respondents operate exclusively on a vertical industry basis. By comparison, only two indicated they marketed exclusively on a cross-industry basis. Details are in Exhibit V-12.

Some observations worth noting are the following:

- Companies with a strong cross-industry orientation were focusing on the operation of a specific vendor's equipment.
- The hardware vendor and the large systems houses have strategies that are both functionally and vertically oriented. Most intend to operate in almost all markets. Their functional orientation is, most often, to provide network management services.
- The more business consulting capability available to a given vendor, the stronger the vertical industry focus.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-12



2. Contract Cost Distribution

The questionnaire requested that each vendor provide the distribution of products and services costs for systems operations contracts. The results show that 49% of contract value is for professional services.

Exhibit V-13 illustrates the contract cost distribution. The "other" category includes telecommunications, training, and supplies.

INPUT asked that each vendor provide an estimate of the percentage of contracts under various pricing alternatives for 1989 and 1992. The largest percentage (52%) of 1989 contracts are based on resource utilization. A substantial portion (31%) of 1989 contracts are fixed price. Exhibit V-14 illustrates the percentage of contracts that fall under the various pricing alternatives.

The vendors believe the 1992 pricing profile will be different. Fixed-price contracts will become the leading alternative, as vendors assume more risks and provide their users with predictable costs. The major decline will be in resource utilization pricing.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT V-13

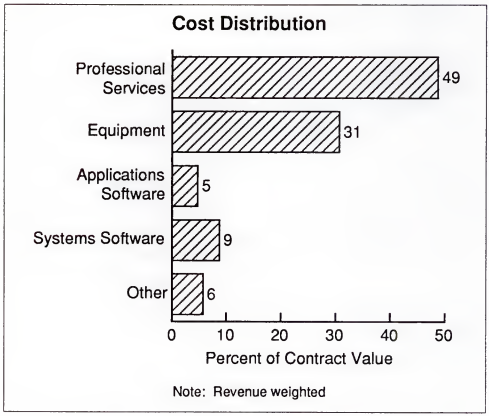
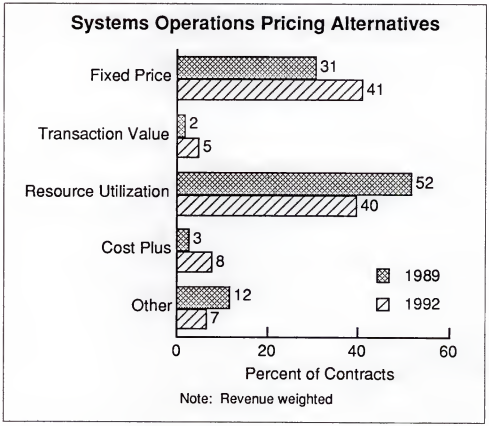


EXHIBIT V-14



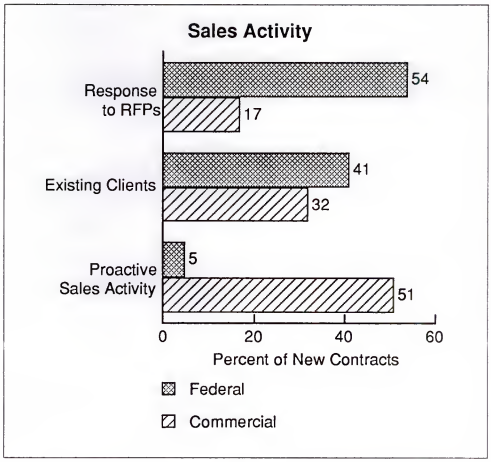
© 1991 by INPUT. Reproduction Prohibited.

3. Sales Activity

INPUT asked vendors to report on the percentage of new contracts that are a result of various sales activities. The results show a substantial difference in commercial and federal sales activities.

Most vendors indicated a substantially higher percentage of contracts resulting from direct sales activity in the commercial marketplace. However, in the federal market, as might be expected, vendors realized most new contracts from responding to bid solicitations or RFPs. Exhibit V-15 illustrates the sales activity.

EXHIBIT V-15



Federal vendors that intend to participate in the commercial market must recognize this difference and must develop or acquire sales personnel who are familiar with and skilled in commercial sales prospecting. Vendors must develop targeted marketing and sales programs, identifying the specific types of prospects that are most likely to buy their services.

© 1991 by INPUT. Reproduction Prohibited.

D

Capabilities and Products

1. SO Alliances

Virtually every vendor profiled makes substantial use of alliances in the execution of its systems operations business. The actual formation of alliances is typically on a contract-by-contract basis, and usually not under the auspices of a formal alliance program.

Examining how the various classes of vendors utilize their alliances provides some interesting insights into vendor capabilities and strategies. Exhibit V-16 presents the data.

The professional services firms have a high degree of self-sufficiency in the areas of computer systems operations, network management, and business consulting. However, they don't have disaster recovery and equipment maintenance services and depend on alliances for these components.

Understanding a particular SO vendor's alliances is a good indicator of a vendor's internal capabilities and provides insight into longer-range strategy. As competitors settle into specific market niches, INPUT anticipates an increase in acquisitions and mergers to reduce dependence on alliances for capabilities that are critical to a particular vendor's SO market strategy.

Some vendors, like EDS, use alliances to enhance their internal capabilities to provide customers with enhanced technological and industrial knowledge.

These strategic alliances yield strength and expertise for vendors while offering them a wider source of revenue and products, which often creates a competitive advantage.

EXHIBIT V-16

Vendor Capabilities and Alliances

Capability	Percentage Using Alliances	Percentage Having Capability
Business Consulting	85	46
Computer Systems Operations	100	31
Network Management	100	23
Applications Design/Development	92	54
Applications Maintenance	85	54
Packaged Applications Software	85	46
Disaster Recovery Service	62	69
Equipment Maintenance	46	69

© 1991 by INPUT. Reproduction Prohibited.

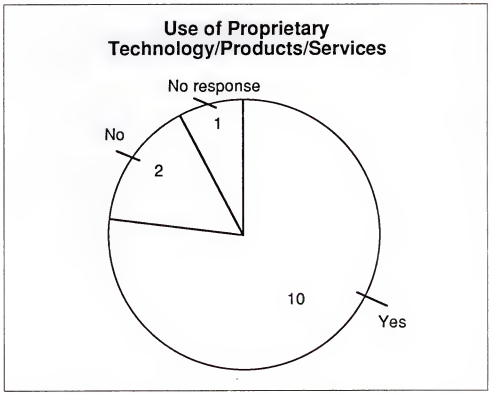
The sum of the two percentages, internal capabilities and use of alliances, in each row exceeds 100% in all cases. This is because many vendors use alliances as well as their own internal capabilities. This is often due to the fact that the vendor does not have enough of a given capability, is seeking unique skills, or needs a more cost-effective operating environment.

2. Proprietary Products/Technologies

In addition to its internal capabilities and the strengths of its alliances, other advantages that a vendor may offer are proprietary technologies and products.

As exhibited in V-17, 10 of the respondents indicated they have proprietary systems operations technologies, products, or services, which gives them either a unique or competitive advantage in the marketplace.

EXHIBIT V-17



While there is no explicit evidence that any vendor's existing proprietary product or service has a significant impact on its success in systems operations, INPUT is convinced that vendors with a unique capability—whether methodology, vertical industry expertise, or product—will have an edge.

© 1991 by INPUT. Reproduction Prohibited.

INPUT believes that unique products, particularly with a vertical industry focus, could give specific vendors a real competitive advantage in the future. In addition, unique products that facilitate systems operations services should offer vendors an opportunity to achieve greater profit margins.

E

Summary

This chapter compared and analyzed the organizational structures, financial characteristics, strategies, and capabilities of the SO vendors who responded to INPUT's survey. In some cases, meaningful comparisons were made by using the vendor classification scheme developed at the onset of this chapter. In others, the classification scheme was of little value. To pull these comparisons together, INPUT identified key differentiating points, and offers the following summary.

1. Organization

There is some variety in how systems operations firms organize to support their SO business. Individual divisions or organizational units dominate. INPUT believes that the organizational structures of vendors will change as they gain additional experience in the market. Organization, in itself, does not appear to be a significant differentiator between vendors today.

2. Financial Characteristics

INPUT's market forecast for systems operations is reasonably aggressive. With a compound annual growth rate of 16% over the next five years, the systems operations market should offer good opportunities for vendors. However, some findings from this research warrant ongoing observation.

First, most vendors active in the federal systems operations market indicated they felt margins were decreasing. It is believed that the pressure generated by concern over the deficit, coupled with competition, are key factors.

Although some characteristics of the commercial market are different from those of the federal market, commercial systems operations firms will need to watch margins carefully as they face increasing competition.

The overall financial picture for SO vendors looks attractive and is likely to remain so for the foreseeable future.

© 1991 by INPUT. Reproduction Prohibited.

3. Market Share

The processing services companies dominate the current market in terms of total systems operations revenues. This market inertia positions them well to continue to lead the pack. However, potentially declining margins for federal systems operations contracts could make maintaining the lead difficult. Finally, SO vendors can expect increased competition from the growing professional services organizations, hardware vendors, and other organizations, as more of them enter the SO marketplace.

4. Internal Capabilities, Alliances

It is difficult to make a clear-cut judgment as to how the four major classes of vendors compare on this point. The questionnaire proposed eight skill/capability areas which might be keys to effectively support a vendor's systems operations business, and explored vendors' capabilities in these areas from an in-house as well as an alliance perspective. Clearly, not every vendor's strategy requires all eight capabilities, in general or in specific projects.

5. Capabilities and Products

The array of capabilities that various vendors bring to the market is truly diverse. Nevertheless, there is no one vendor that has it all. This is particularly true when considering the variety of potential SO projects, which leads to frequent use of alliances for most vendors.

Technical expertise—including computer systems operations, network management, and technical support—are critical capabilities for vendors that intend to grow in the market. Clients weigh these capabilities heavily when selecting a vendor, and vendors have a higher probability of success when they participate in the application development and implementation process.

In terms of products, proprietary products—particularly applications software products and operations management techniques—offer an advantage over the competition. Unique technologies and applications software and the ability to apply them are clearly able to be leveraged and offer the vendor the opportunity to penetrate vertical industry markets.

© 1991 by INPUT. Reproduction Prohibited.

© 1991 by INPUT. Reproduction Prohibited.

INPUT LIBRARY

COMPANY PROFILE

Andersen Consulting

1. Key Systems Operations Contacts

The systems operations activities at Andersen Consulting are under the direction of David H. Armour, the Managing Partner for Systems Management America. He reports directly to John T. Kelly, Andersen's Managing Partner, America. Mr. Armour's office is located at:

5205 North O'Connor
Suite 1400
Irving, Texas 75039

2. Description of Principal Business

Andersen Consulting provides technology consulting services to clients in nearly every business and government sector. Andersen helps clients use information competitively in all phases of their management activity—strategic, operations, and financial. In September 1989, Andersen Consulting assumed the operations, activities, and personnel of the former Management Information Consulting practice of Arthur Andersen and Company, which provides accounting, audit, and tax services.

Andersen Consulting is a separate, legal entity not involved in accounting or tax work. None of the partners in Arthur Andersen is an active partner in Andersen Consulting, or vice versa. Both Andersen Consulting and Arthur Andersen are member firms of the Arthur Andersen Worldwide Organization (Lawrence A. Weinbach, Managing Partner—chief executive). An accurate description of the Arthur Andersen Worldwide Organization is "a global professional services firm."

A breakdown of Andersen Consulting's services is as follows:

- General management consulting
- Information systems consulting
- Packaged applications software
- Computer-aided software engineering products
- Integrated solutions to business needs
- Organizational change management services

Systems operations plays an important role in many of these categories.

© 1991 by INPUT. Reproduction Prohibited.

3. Systems Operations Service Characteristics and Capabilities

Exhibit AC-1 graphically presents Andersen's current source of revenue and how Andersen views the change that will take place in its market over the next few years. All of the numbers represent a percentage of total revenue derived from systems operations. The first chart pairing indicates that Andersen currently provides most SO services on equipment it owns. This will change, with more client ownership in 1992.

AC-1

Market Characteristics

		1989 (Percent)	1992 (Percent)
Equipment Ownership Percent of Revenue	Andersen	95	80
	Client	5	20
Equipment Location Percent of Revenue	Andersen	95	90
	Client	5	10
Processing Percent of Revenue	Shared	95	95
	Dedicated	5	5
Applications Software Developed by	Client	40	40
	Andersen	15	20
	Third Party	45	40

Currently, Andersen provides systems operations support from one client-owned data center and four Andersen-owned data centers. INPUT does not expect Andersen's revenues from its own data centers to decline. Rather, the second pairing merely indicates that revenues from client-owned centers will grow faster, as Andersen expands its overall systems operations business.The second chart pairing also suggests that all equipment at a client site is currently client-owned.

The third chart pairing indicates no change in Andersen's single-client/ multiple-client ratio. However, since 20% of the equipment will be owned by clients, it appears that, in some cases, Andersen will be supporting multiple clients from client-owned equipment.

© 1991 by INPUT. Reproduction Prohibited.

The fourth chart pairing shows little expected change in the distribution of applications software among Andersen's sites. It will remain fairly evenly split between client and third-party software, with Andersen's participation in applications software growing slightly.

Exhibit AC-2 compares the distribution of systems operations contracts under various pricing alternatives. Andersen expects some interesting changes in the next few years. Its share of fixed-price contracts will double, possibly as a result of the expected increase in client-owned equipment and sites. Charges, based on resource utilization, will decrease, at least as a percentage of overall business. Andersen will also begin doing some charging based on transaction volumes. INPUT believes that, in an absolute sense, charges based on resource utilization will not actually decrease. Rather, its growth rate will lag behind other parts of Andersen's systems operations business.

AC-2

Distribution of Revenue

Contract Type	1989 (Percent)	1992 (Percent)
Fixed Price	20	40
Transaction Volume		20
Resource Utilization	80	40

INPUT asked Andersen to characterize the duration of its contracts. The results showed a somewhat atypical dominance of very long-term projects:

- 5 to 8 years: 20%
- Over 8 years: 80%

This long-term situation provides Andersen with a stable backlog of work on which to build.

© 1991 by INPUT. Reproduction Prohibited.

Exhibit AC-3 compares systems operations capabilities internal to Andersen with those acquired through alliances. Unlike most other vendors studied by INPUT, Andersen does not overlap any internal capabilities with outside assistance. It relies on teaming partners only for disaster recovery services and network operations. There are several firms specializing in each of these two disciplines, and each discipline depends highly on advanced technology for cost-effective solutions.

AC-3

Capabilities

Internal and Alliances	None
Internal Only	• Business Consulting • Computer Systems Operations • Network Management • Applications Design/Development • Applications Maintenance • Packaged Applications Software • Equipment Maintenance
Alliance Only	• Disaster Recovery Service • Network Operations
Neither Internal nor Alliance	None

On another issue, Andersen identifies industry-specific service as its main competitive edge. In particular, it has extremely strong expertise in application development and support for most vertical industries. Further, it can provide this support on a worldwide basis to its multinational clients. This, combined with its renowned "Foundation" approach to systems development, provides systems operations prospects with a one-stop source for fulfillment of their information system needs.

4. Markets Served

Andersen currently provides systems operations support to approximately 35 commercial customers worldwide, with an average contract value of $10 million. Currently, Andersen derives no systems operations revenues from federal clients. The low profit margins and highly com-

© 1991 by INPUT. Reproduction Prohibited.

petitive nature of federal systems operations business may be discouraging Andersen from pursuing it. However, given the breadth of Andersen's other federal business, Andersen will likely begin providing systems operations to federal agencies.

Andersen has targeted the following vertical industries for specialization:

- Energy
- Manufacturing
- Financial Services
- Consumer Products
- State and Local Governments
- Health Care

5. Competitive Position

Andersen is fairly new to the systems operations business. Although Andersen has operated client data centers as an accommodation for several years, it has only been aggressively pursuing this market for one and one-half years. This contrasts with some other firms that INPUT has investigated, which have been providing systems operations support for nearly 30 years. As previously indicated, Andersen has not yet entered the federal systems operations market.

In 1989, Andersen realized $30 million in SO revenue. However, it is growing this business very rapidly, currently realizing revenues at an annual rate of approximately $100 million. It considers its primary competitors to be:

- IBM
- EDS
- Regional players

It is interesting to compare Andersen with its two leading rivals. Each brings different credentials to the market:

- Andersen has extensive industry-specific systems development experience, helping it to understand its clients' needs.

- IBM provides unparalleled hardware and software experience, possessing a greater understanding of the technology's potential than either of the other two.

- EDS has dramatically more systems operations experience and network management experience than its two prime competitors combined.

It will be interesting to see how this rivalry plays out over the next few years.

© 1991 by INPUT. Reproduction Prohibited.

6. Recent Events

As might be expected, Andersen is leveraging its extensive experience in other areas to grow its systems operations business. Recently, Andersen captured a $10.2 million contract from the Jet Propulsion Laboratory to implement an integrated management and administration system. The system will become part of JPL's Management and Administrative Support System (MASS) Program.

On another project, Andersen will assist the Ontario Ministry of Consumer and Commercial Relations with a $7 million imaging system project. Andersen will act as the systems integrator in a multiyear effort to develop and operate an optical imaging system to capture the province's more than ten million vital statistical records.

Andersen has also formed a strategic outsourcing alliance with INFONET Services Corporation. The nonexclusive alliance enhances both firms' capabilities to offer communications, computing services, application support, and business operations expertise to meet specific customer needs. The alliance enables Andersen to offer INFONET's global communications network on a preferred basis, which will be very important to its SO capabilities.

7. Organization

As previously indicated, Andersen Consulting provides systems operations support through one of its divisions. It has been estimated that Andersen Consulting derived $1.88 billion of revenue from consulting services during its 1990 fiscal year. Although systems operations represents a very small fraction of this business, INPUT expects it to take a steadily larger share, as it has become a strategic offering for Andersen.

Currently, Andersen has approximately 235 people dedicated to systems operations activities. As previously indicated, INPUT expects this to grow considerably. The bulk of this staff is engaged in five areas:

- Systems Operations: 40%
- Technical Support: 14%
- User Support: 14%
- General Administration: 10%
- Applications Design and Development: 10%

Andersen also has limited staff dedicated to other areas.

© 1991 by INPUT. Reproduction Prohibited.

8. Systems Operations Alliances

Except for the INFONET relationship discussed earlier, Andersen has no formal alliance programs for systems operations. It uses INFONET primarily for telecommunications backup and support. It has also established an arrangement with IBM for disaster recovery. As indicated earlier, Andersen prefers to build internal systems operations capabilities whenever possible.

9. Systems Operations Marketing Strategy

Andersen expects to expand its systems operations business from its existing client base as well as through new accounts. It has identified various selection criteria for pursuing new business:

- It is not cost-effective for Andersen to pursue small systems operations opportunities. Therefore, it generally pursues only contracts with a minimum revenue stream of $3 million per year.
- Andersen currently plans to stay with the equipment it already knows. Therefore, it usually limits itself to systems operations projects involving IBM, Amdahl, or DEC equipment.
- As previously indicated, Andersen is currently focusing on six vertical industries. Therefore, it pursues work in only those industries, where it has the necessary expertise.
- Andersen also prefers to focus on technology-intensive industries and clients, since this is where it believes it can gain a competitive edge.
- Finally, it will focus on opportunities where it can provide the highest added value, since these typically are the most profitable projects.

Andersen anticipates that a major portion of its ongoing systems operations business will be the result of existing client relationships. Andersen's strategy will be to leverage its extensive experience in other areas to increase its systems operations business. Andersen has estimated that its new contracts will come from the following sources:

- Responding to bid solicitations or RFPs 50%
- New contracts with existing clients 25%
- Proactive direct sales activity 25%

In competing for systems operations, Andersen identifies the following key factors, some of which differentiate it from its competitors:

- Cost-effective processing

© 1991 by INPUT. Reproduction Prohibited.

- Application of business/technical expertise
- Full range of services offered, including applications development and planning
- Sensitivity to client relationships
- Independence of particular hardware or software solutions

10. Systems Operations Customer Base

Andersen currently has approximately 10 commercial clients in the U.S., approximately 20 commercial clients in North America, and approximately 35 commercial clients worldwide. As previously indicated, Andersen has no federal clients for systems operations services. The following are typical of Andersen's engagements:

- At the Greyhound Dial Corporation, Andersen manages and performs mainframe-based computer operations, systems software maintenance, and telecommunications.
- At MAXUS Energy Corporation, Andersen manages the entire data processing operation, providing computer operations and technical support, including systems programming and telecommunications support.
- At a large multinational manufacturing company, Andersen is operating the current systems while replacing the company's manufacturing, distribution, and financial systems.

11. Summary and Future Directions

In responding to INPUT's survey, Andersen estimated that the commercial systems operations business is growing 25% annually, while the federal business is growing only at 15%. Andersen also believes that operating margins are increasing for commercial work, while remaining fairly flat for federal work. This explains Andersen's decision to focus on the commercial market for systems operations. Andersen has experienced some start-up costs associated with entering this business, and, therefore, has not yet achieved acceptable profit margins. However, as its systems operations business matures, margins will likely improve.

Andersen is investing so as to become a major player in this market. INPUT therefore expects it to grow faster than the overall market, and subsequently, expand into other vertical industries. Essentially, any area in which it has consulting expertise will become a target of its systems operations efforts.

© 1991 by INPUT. Reproduction Prohibited.

COMPANY PROFILE

Computer Task Group, Inc. (CTG)

1. Key Systems Operations Contacts

The systems operations activities of Computer Task Group, Inc. (CTG) are under the direction of John A. Lozan, a corporate Vice President. He reports directly to John P. Courtney, President of the corporation.

The executive offices of the company are located at:

800 Delaware Avenue
Buffalo, NY 14209
(716) 882-8000

However, Mr. Lozan's office is located at:

700 Delaware Avenue
Buffalo, NY 14209
(716) 881-3000

2. Description of Principal Business

Currently, systems operations is a major new emphasis area for CTG. Approximately 87% ($203 million) of CTG's revenue was derived from its various professional services, including systems operations, and 13% ($30 million) from commercial systems integration activities.

CTG classifies its services into three areas:

- Professional services—the company's major source of revenue is derived from this type of service. CTG staff provide programming, systems analysis and design, project management, systems operations, and other services in support of the client's data processing applications.

- Consulting—examples of specialty areas in which CTG has experience include information engineering, data base consulting, telecommunications/network consulting, conversions, migration, and document management services.

- Commercial systems integration services—these services are provided to the manufacturing and industrial markets through CTG's subsidiary, Scientific Systems Services. Services provided include management consulting; concept and applications planning studies; control-Spec™ functional specification and scope-of-work contracts; systems architecture services, including hardware selection, systems software evaluation and selection, application software, and communications; and project implementation.

© 1991 by INPUT. Reproduction Prohibited.

CTG provides its commercial professional services through a network of 65 branches and field offices.

Currently, systems operations represents approximately 5% of CTG's sales. It is offered on a nationwide basis. A significant number of CTG's systems operations contracts are in partnership with IBM.

3. Systems Operations Service Characteristics and Capabilities

Exhibit CTG-1 presents graphically how CTG views the change in its market in the next four years. All of the numbers represent a percentage of total revenue derived from systems operations. The first chart pairing indicates that there will be significant change in the next few years in the percentage of equipment that is client owned. CTG expects client-owned equipment contracts to continue to be a very minor portion of its overall systems operations activities. The majority of activity will be third-party ownership. This indicates CTG's change in strategy from a service bureau orientation.

However, the second pairing suggests the opposite result for equipment locations, as equipment at client sites will shrink from 63% in 1989 to 50% in 1992. This suggests that, as CTG increases its systems operations business, clients will find it more economical to utilize shared sites.

On the other hand, CTG expects some change in the mix of shared versus dedicated facilities. This suggests that, as CTG or third parties convert ownership of client equipment, it will begin using that equipment for other clients. The three pairings of boxes, taken together, suggest some significant changes in the way CTG will conduct its systems operations business. However, since it currently supports only three centers, some changes would be expected as the business grows. Currently, all of CTG's systems operations activities involve client-developed applications software. However, as the fourth pairing in Exhibit CTG-1 shows, this will change slightly over the next few years. In view of its significant professional services activities, CTG does plan to leverage more of its software development efforts into systems operations.

Exhibit CTG-2 compares the distribution of systems operations revenue under various pricing alternatives. The data suggests some dramatic changes in the way CTG will conduct its systems operations business. In particular, by going to fixed-price work, CTG will be assuming considerably higher risks in the performance of its contracts. It is possible, as CTG builds up a critical mass of staff expertise in systems operations, that this risk will become manageable and fully justified by the potentially higher profit margins.

© 1991 by INPUT. Reproduction Prohibited.

CTG-1

Market Characteristics

		1989 (Percent)	1992 (Percent)
Equipment Ownership Percent of Revenue	CTG	91	10
	Client	0	10
	Third Party	9	80
Equipment Location Percent of Revenue	CTG/IBM	37	10
	Client	63	50
	Third Party		40
Processing Percent of Revenue	Shared	90	60
	Dedicated	10	40
Applications Software Developed by	Client	100	60
	CTG		20
	Third Party		20

CTG-2

Distribution of Revenue

Contract Type	1989 (Percent)	1992 (Percent)
Fixed Price	9	80
Resource Utilization	91	
Cost plus Predefined Margin		20

© 1991 by INPUT. Reproduction Prohibited.

Currently, CTG's systems operations contracts range from three to four years for half the work to more than eight years for the other half. Currently, CTG derives none of its systems operations revenue from the federal government.

Exhibit CTG-3 compares systems operations capabilities derived from internal sources with those derived from alliances. The data suggests that CTG has made significant teaming efforts in its systems operations activities. Since IBM currently has an equity investment in CTG, IBM will likely continue to provide the system software, the maintenance arrangements and the hardware platforms.

CTG-3

Capabilities

Internal and Alliances	• Business Consulting • Computer Systems Operations • Network Management
Internal Only	• Network Management • Applications Design/Development • Applications Maintenance
Alliance Only	• Equipment Maintenance • Disaster Recovery Service • Packaged Applications Software
Neither Internal nor Alliance	• Packaged Applications Software

On another issue, CTG is heavily involved in unique consulting and use of systems integration skills, including communications, imaging, documentation, conversion technology, and data base architecture, which give it a competitive advantage. Business growth will likely come from expansion of its professional services business and the above specialties with existing clients. Since this portion of CTG's business is so large, there will be a sufficient number of current clients to increase market penetration.

4. Markets Served

As previously indicated, CTG is just getting started in the systems operations business. It currently services several commercial clients and no federal clients. At this point, CTG appears to be focused on the financial and manufacturing industries.

© 1991 by INPUT. Reproduction Prohibited.

5. Competitive Position

The company has been providing systems operations support for the past five years, exclusively in the commercial area. This business has grown from $4.89 million in 1988 to $6.72 million in 1989. As CTG grows its systems operations business, it expects its primary competition to come from the large, established firms, including EDS, Andersen Consulting, and Perot Systems.

6. Recent Events

CTG has recently been active in mergers and acquisitions. First, it acquired Connolly Data Systems, Inc., a Lowell, Massachusetts firm that specializes in networking systems integration. In its five-year plan, CTG had targeted networking, communications, and connectivity as areas of high growth. Therefore, the acquisition of Connolly fits well with CTG's strategic commitment.

In another action, World Software Group, a privately held Dutch company, increased its equity stake in CTG to 14.66% of outstanding common shares. World Software Group invests primarily in computer software firms, so CTG's position represents a slight departure from past trends.

Finally, CTG acquired the Rendeck International Group of companies. Rendeck will act as CTG's new European division. Rendeck, with 360 European employees and 1989 revenues of $24 million, provides consulting, professional services, training, and mainframe systems software.

7. Organization

CTG is organized around its three main business areas, as described in Section 2 above. In addition to a limited headquarters staff, CTG currently operates 60 offices.

During the second quarter of 1989, CTG closed four unprofitable branches and eliminated 65 overhead positions to save over $1 million. Results of operations for the second and third quarters were lower than expected, at which time the company announced it would undertake a major restructuring program.

- Overall during the year, CTG eliminated more than 300 positions through the consolidation of overhead functions and the sale or closing of branches. The company consolidated its field operations from 71 to 60 offices.

© 1991 by INPUT. Reproduction Prohibited.

- The restructuring program resulted in charges to 1989 earnings of $4.2 million for losses on the closing of business units and $13.2 million for other restructuring expenses.

  - Included in the losses on closed business units were losses resulting from the sale of CTG's Amtec Systems Corporation subsidiary and the Ottawa, Ontario, branch office.

  - Other restructuring expenses included severances, costs related to streamlining administrative programs and benefit plans, and costs for consolidating business operations.

- As a result of the restructuring, CTG's first three quarters of 1990 provided record growth in profit, not including expansion into Europe during this period.

8. Systems Operations Alliances

CTG indicated to INPUT that it currently has a systems operations alliance with IBM. In June 1989, IBM made an equity investment in CTG, acquiring approximately 1.5 million shares of CTG preferred stock for $21 million.

- In conjunction with this transaction, the two companies agreed to levels of use of CTG's systems engineers on products for IBM and its customers. Some of these resources are being applied to some of IBM's large SO contracts, like Kodak and Bank South.

- Revenues from IBM, which were about 5% of total revenue prior to this contract, increased approximately 50% by the end of 1989.

INPUT believes that, as CTG increases its systems operations activities, this IBM relationship will continue to play an important role.

9. Systems Operations Marketing Strategy

As previously indicated, CTG plans to expand its systems operations business among its professional services clients. In addition, it will likely enter new markets. However, this latter thrust is expected to account for only 10% of its new business. The balance will come from existing customers. As of this writing, CTG plans no penetration of the federal market.

CTG expects to receive approximately 20% of its new systems operations business through formal solicitation. The balance of new business will come from direct sales activity. This is consistent with its overall plans to expand the contracted work with its current client base.

© 1991 by INPUT. Reproduction Prohibited.

10. Systems Operations Customer Base

As indicated earlier, CTG has not yet developed systems operations into a major line of business. In 1989, systems operations revenues represented less than 3% of the firm's overall revenues. Its two current clients, IBM and USS/POSCO Industries, represent too small a sample from which to draw any conclusions. However, as the business grows, CTG may choose to focus on certain vertical markets.

11. Summary and Future Directions

In responding to INPUT's survey, CTG estimated that the systems operations market would grow at a 28% CAGR over the next five years, with margins increasing. Since CTG also views systems operations as a highly profitable business, INPUT expects it to increase both sales and marketing efforts in the near term. CTG sees the market segmenting into a number of solutions based on system size. In the large mainframe opportunities, it plans to partner with IBM as the staff provider. In smaller situations, it will provide complete services. CTG will also probably take advantage of its IBM relationship to reach new clients, while at the same time increasing penetration of its own client base.

© 1991 by INPUT. Reproduction Prohibited.

COMPANY PROFILE

Electronic Data Systems (EDS)

1. Key Systems Operations Contacts

The systems operations activities at Electronic Data Systems (EDS) are under the direct supervision of Jeff Heller, Senior Vice President. He is located at:

7171 Forest Lane
Dallas, Texas 75230

2. Description of Principal Business

Electronic Data Systems Corporation, founded in 1962, is a leading information and communications services company providing information processing, consulting, systems management, systems integration, and communications services to the financial, insurance, commercial, and communications industries domestically and internationally, and to state and federal government. These markets include banking; credit unions; property, life, health, and casualty insurance; distribution; manufacturing; transportation; retail; and energy.

- EDS currently has more than 60,000 employees and more than 7,000 clients in all 50 states and in 27 other countries worldwide.

- EDS' largest clients are General Motors Corporation (GM) and its subsidiaries, which contributed approximately 55% ($3.0 billion) to EDS' 1989 revenue.

3. Systems Operations Service Characteristics and Capabilities

The company currently operates 21 Information Processing Centers (IPCs) worldwide. The systems operations for many of its SO customers are conducted at these centers in a multiple-client environment. These IPCs are interlinked via network. The processing load can be shifted from one center to another as the need arises.

There are 122 other data centers operated and owned by EDS throughout the world, serving single clients. In addition, EDS operates other data centers that are owned by the client.

Most of its contracts are for a minimum of three to five years, but the terms and conditions vary considerably from industry to industry and cannot be categorized into convenient groupings, such as fixed price or cost plus fixed fee.

© 1991 by INPUT. Reproduction Prohibited.

EDS has the internal capabilities to provide all the required systems operations services to its clients, ranging from business consulting to equipment maintenance, but still chooses to use alliances to supplement its own resources in many instances. Typical alliance partners will be further identified in Section 8 below.

The company identifies two proprietary products that it believes gives it a competitive edge over its competitors. These are:

- Total Plan - This system is a fully integrated Health Insurance Administration processing package that increases its clients' productivity and decreases unnecessary benefit payments.

- C4 Technology Program - This system of programs is designed to standardize, enhance and integrate CAD, CAE, CAM and CIM capabilities for the product engineering and design tasks in the client base.

4. Markets Served

EDS cannot split out of its customer base of 7,000 those for whom it is performing systems operations functions exclusively. The demographics of the customer base are as follows:

- 6,938 commercial clients
- 40 state and local government operations
- 12 federal government agencies

EDS is a supplier to a broad range of industries in the commercial market. EDS provides systems operations services to federal, state and local government customers. Recent contract examples include the following:

- In August 1990, EDS won a five-year contract to provide life cycle management services of Standard Army Management Information Systems for the Army's Information Systems Software Center at Fort Belvoir (VA). Maximum contract value is approximately $116 million.

- In March 1990, EDS was awarded a seven-year, $45 million contract with the U.S. Small Business Administration (SBA) to operate the SBA's Washington data center, which supports 1,700 terminals at SBA offices around the country.

- EDS currently processes more than two-thirds of all Medicaid claims submitted in the U.S. Medicaid contract awards including the following:

© 1991 by INPUT. Reproduction Prohibited.

- During the first quarter of 1990, under a five-year competitive recompete contract with Kansas SRS, EDS will provide fiscal agent services and expand medical review, recipient assistance, provider relations, and enrollment services.

- In November 1989, EDS signed an eight-year, $16.5 million contract with Delaware's Department of Health and Social Services to operate the state's Medicaid Management Information System.

EDS offers financial institutions technology-based business solutions through systems integration, systems operations, and service bureau operations. Products and services include data processing, communications, information management, back-office, bank card, and payment services. The company currently serves more than 6,000 banks, credit unions, and savings institutions worldwide.

EDS provides FM, processing services and turnkey systems to commercial insurance companies and Blue Cross/Blue Shield organizations.

- During 1989, EDS processed over 391 million life, health, and casualty insurance claims.

- In March 1990, EDS and American International Healthcare, Inc. (AIH), a subsidiary of American International Group, announced plans to jointly develop and market managed-care information systems for the health insurance marketplace in the U.S. and abroad.

EDS also provides a range of systems operations and professional services to domestic and international clients. EDS was one of the world's first commercial systems operations specialists and has emerged as a major force in both government and commercial markets.

- Examples of recent domestic commercial contracts obtained by EDS include the following:

  - In August 1990, EDS was awarded a ten-year contract with the Permian Corporation to manage Permian's information technology in support of the energy company's oil and gas distribution operations.

  - In April 1990, EDS signed a ten-year contract with Westmoreland Coal Company to assume responsiblity for all of Westmoreland's processing and communications operations.

© 1991 by INPUT. Reproduction Prohibited.

5. Competitive Position

The company has been active in the commercial systems operations arena for 28 years and in the federal government arena for 23 years. In the early years, the process was known either as facilities management or operations management, but it is essentially the same set of activities that is now known as systems operations.

Approximately 55% of EDS' total 1989 revenue was derived from its parent company, GM, and 2% was derived from interest and other sources. The remaining 43% ($2.38 billion) of total revenue was derived from clients in various industries, including banking and finance, insurance, manufacturing, retail, distribution, transportation, and energy.

EDS' 1989 source of revenue by industry market (including captive GM revenues) follows:

Manufacturing	41%
Financial	15%
Government	11%
Insurance	6%
International	16%
Other	11%

Corporate management at EDS recognizes the following primary competitors in its major markets. A different set is dominant in each sector, though some are common to both sectors. Exhibit EDS-1 identifies them for each sector.

EDS-1

Major Competitors in Each Market Sector

Commercial	Federal
IBM	IBM
CSC	CSC
Andersen Consulting	Boeing
Perot Systems	PRC, Inc.
Systematics	Unisys

© 1991 by INPUT. Reproduction Prohibited.

6. Recent Events

Recent acquisitions and joint ventures concluded by EDS include the following:

- In September 1990, EDS joined with Hewlett-Packard to finance the purchase of Ingres Corp., a relational data base supplier, by ASK Computing, a manufacturing software developer. In return for $40 million, EDS will get a 20% stake in ASK and access to a strong base of manufacturing and data base technologies.

- In March 1990, EDS purchased a 25% equity interest in Thomas Group, Inc (TGI) and jointly will market TGI's Accelerated Business Competitive (ABC) programs through EDS' Manufacturing and Distribution Strategic Business Unit.

- In January 1990, EDS acquired a 30% interest in Infocel, Inc., a Raleigh, NC-based provider of software products for local governments, education, and public safety.

- In May 1989, EDS and Hitachi, Ltd. announced the completion of their acquisition of National Advanced Systems Corporation (NAS) from National Semiconductor Corporation. EDS and Hitachi have formed a new, independently operated, joint venture company, Hitachi Data Systems Corp., which will market and distribute Hitachi PCM mainframe and peripheral equipment. EDS holds a 20% equity in the new venture.

- In April 1989, EDS acquired BancSystems Association, Inc., (Westlake, OH), a subsidiary of Society Corporation that provides credit card transaction processing services to the financial services industry. Terms of the purchase were not disclosed.

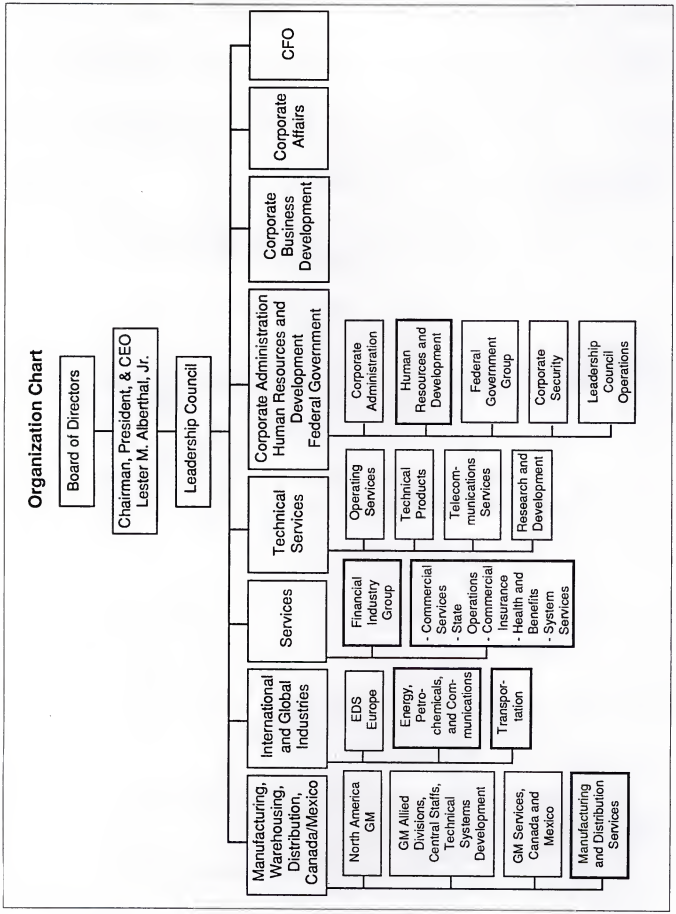
BancSystems provides MasterCard and Visa credit and debit processing and related services to more than 180 financial institutions in Ohio and seven other states, with more than 2.4 million cardholders and 38,000 merchants. The company had approximately 300 employees at the time of the acquisition.

- In April 1989, EDS acquired the EFS electronic funds transfer (EFT) business of Automatic Data Processing, Inc. (ADP). Terms of the acquisition were not disclosed.

ADP's EFT business includes a range of services for automatic teller machines and point-of-sale applications for the banking industry and The Exchange, ADP's EFT network.

Headquartered in Clifton (NJ), ADP's EFT operations employ nearly 300 people and supply one of the largest networks in the industry.

© 1991 by INPUT. Reproduction Prohibited.



© 1991 by INPUT. Reproduction Prohibited.

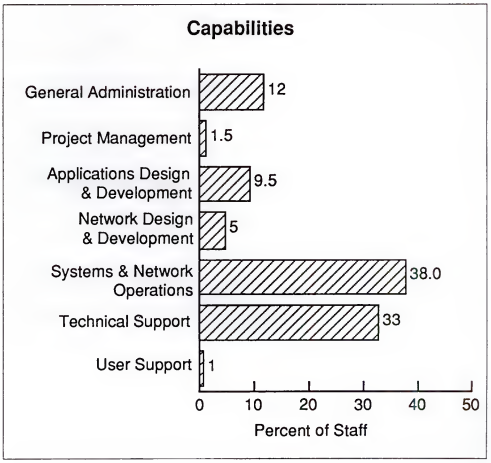
- In March 1989, EDS and Hewlett-Packard signed an agreement that formally establishes the framework for cooperation on systems integration projects. Under the terms of the agreement, HP and EDS will submit joint proposals to customers for the development, design, management, and support of projects requiring the integration of hardware, software, and project management services.

7. Organization

The corporate organization chart is presented in Exhibit EDS-2. Highlighted sections represent operating units that have systems operations activities in the United States. The units with responsibilities for GM business are not highlighted.

EDS has reported that more than 16,000 of its employees are engaged in systems operations activities. Of this total, 96.8% are servicing commercial accounts while the remaining 3.2% work on federal government contracts. Exhibit EDS-3 illustrates how those staff capabilities are distributed.

EDS-3



© 1991 by INPUT. Reproduction Prohibited.

8. Systems Operations Alliances

EDS has a strong, active alliance program for its systems operations business. EDS states that through a variety of partnership agreements, it is able to provide customers with greater value through enhanced technological and industry knowledge, resources, products and services. Joint development allows EDS to serve as a major influence in the development of vendor hardware and software. These strategic alliances enable EDS to draw on the strength and expertise of other companies and offer a wider range of services and products to meet customer needs.

The company has in place more than 5,000 vendor contracts with support organizations. Typical of these partnerships are the following:

- ASK Computing, Banc One and Norwest will do custom application design and development work for EDS SO clients in their respective fields of manufacturing control, banking and finance, and transportation.
- Earth Observation Satellite Company and Infocel provide their proprietary software to clients through EDS when these specialized products are required.
- Diebold is a provider of maintenance for ATM equipment for banking customers for which EDS does systems operations.

9. Systems Operations Marketing Strategy

EDS expects to continue to grow significantly in the systems operations market, both by expanding penetration in current markets and by entering new markets. In the latter case, the selection criteria to identify new markets will include the size of companies in that sector, the changes occurring in that sector and how they will influence the receptivity of prospects to systems operations. In addition, the market sector will have to include enough viable prospects to make entry a profitable venture for the company.

Currently, EDS gets about 80% of its revenue from its existing client bases in the commercial and federal government sectors. The rest of the revenue is generated by new accounts. In the case of new commercial business, half is directly solicited and half is obtained through the recommendations of consultants.

Exhibit EDS-4 shows how EDS obtains new business in the two major market sectors. Note that most of the business in the federal government sector is acquired by responding to formal bid solicitations or RFPs, while less than 15% of the commercial contracts are obtained that way. Note also that proactive sales efforts result in about one-third of the new business in the commercial sector, but this avenue is severely restricted in the federal sector because of the competitive bid solicitation system.

© 1991 by INPUT. Reproduction Prohibited.

EDS-4

Sources of New Business

	Percent	
	Commercial	Federal
Responding to solicitations	12	75
New contracts with existing clients	45	20
Proactive direct sales	33	5
Other	10	

EDS has a 28-year history of success in facilities management to establish its credibility in the systems operations industry. It uses this background as well as its known telecommunications expertise to establish its reputation relative to its competitors. It owns the largest privately owned network in the country, which links its 21 Information Processing Centers.

It positions itself as uniquely qualified to provide any of the resources that a particular SO opportunity may require. It has also pioneered the acquisition of client data centers and operations staff to ease the transition to external systems operations environments and provide an additional financial incentive for the move.

10. Systems Operations Customer Base

EDS has 7,000 customers worldwide. Management cannot identify specifically which of these are exclusively systems operations clients. Five typical major systems operations clients give a good indication of the range of EDS' contracts, however:

- Shell Brazil - EDS operates and manages two VAX computer centers and two communications command centers.
- U. S. Army - EDS provides systems development, conversion and maintenance resources for Standard Army Management Information Systems.

© 1991 by INPUT. Reproduction Prohibited.

- Security Connecticut Life - EDS manages the data center operations and communications, including business analysis, systems maintenance and development, programming and design, and project management.

- First Fidelity Bancorporation - EDS will convert a number of applications systems into a unified, companywide single platform and manage the resultant data center.

- Western Union - EDS will execute a 10-year facilities management contract to provide processing and systems engineering support for the Business Applications Systems division.

11. Summary and Future Directions

EDS, the pioneer in facilities management, has broadened its services and is the clear leader in the commercial systems operations business. Its size, experience, and financial resources will continue to make it a very aggressive and capable competitor in this market.

Its broad vertical market focus and extensive early experience has recently been supplemented with an aggressive acquisition policy in which it has obtained not only major processing contracts, but also much expertise in such fields as title insurance and airline reservation systems.

© 1991 by INPUT. Reproduction Prohibited.

COMPANY PROFILE

Systems & Computer Technology

1. Key Systems Operations Contacts

The systems operations activities at Systems & Computer Technology (SCT) are under the direction of Michael J. Emmi, President and Chief Executive officer. The executive offices of the company are located at:

Great Valley Corporate Center
4 Country View Road
Malvern, PA 19355

2. Description of Principal Businesses

SCT has been in the systems operations business for 23 years. Systems operations is its principal business. In 1989, $44 million in annual revenues was derived from information services activities.

SCT provides systems operations, systems integration, and professional services, including custom software development and telecommunications consulting. These services are provided to state and local government agencies and educational institutions.

SCT is currently organized into two operating divisions as follows:

- The Information Resource Management (IRM) division provides systems integration services, including management and staffing operations for the information resources (computing, office automation, telecommunications) of educational institutions and state and local governments. This division also includes SCT's customer software development and technical consulting services.

- The Software and Technology Services division incorporates SCT's packaged application software products and telecommunications consulting services for education and government.

3. Systems Operations Service Characteristics and Capabilities

Exhibit SCT-1 presents graphically how SCT views the change in its market over the next few years. All of the numbers represent a percentage of total revenue derived from systems operations. The first chart pairing indicates that there will be significant change expected in the next few years in the percentage of revenues generated from client-owned equipment. SCT expects vendor-owned equipment contracts to become a more significant portion of its overall systems operations activities. However, the majority of activity will continue to come from client-owned equipment.

© 1991 by INPUT. Reproduction Prohibited.

The second pairing shows a parallel in percentages to the first for equipment location. This suggests that SCT will continue to maintain equipment at client sites. However, as SCT grows its systems operations business, it will purchase equipment for installation at vendor sites.

EXHIBIT SCT-1

Market Characteristics

		1989 (Percent)	1992 (Percent)
Equipment Ownership Percent of Revenue	SCT	95	75
	Client	5	25
Equipment Location Percent of Revenue	SCT	95	75
	Client	5	25
Processing Percent of Revenue	Shared	0	25
	Dedicated	100	75
Applications Software Developed by	Client	5	5
	SCT	95	95

The third chart pairing shows a significant change in the mix of shared versus dedicated facilities. This suggests that, as SCT converts ownership of client-owned equipment, it will begin using that equipment for other clients.

The three pairings, taken together, suggest some significant changes in the way that SCT will conduct its systems operations business. However, since it currently supports 41 client-owned data centers and only one vendor-owned data center, some changes would be expected as the business grows.

The fourth pairing in Exhibit SCT-1 shows no expected changes in the software mix. Ninety-five percent of applications software is developed by SCT with the remainder coming from the client. This response indicated that SCT is leveraging its software capabilities to grow its systems operations business.

© 1991 by INPUT. Reproduction Prohibited.

Exhibit SCT-2 compares the distribution of systems operations revenue under various pricing alternatives. As with the pairings in Exhibit SCT-1, SCT sees significant change in its business share over the next few years. SCT's systems operations revenues will shift from predominantly time and materials to an even mix of fixed price and time and materials.

SCT's IRM division contracts typically cover a three- to five-year period, with an option to renew. SCT derives its systems operations revenue largely from colleges, universities, and other educational institutions, in addition to state and local government agencies.

Exhibit SCT-3 compares systems operations capabilities derived from internal sources versus those derived from alliances. The data suggest that SCT has made limited teaming effort for its systems operations activities. SCT has informal alliances with DEC, Sequent, and Hewlett-Packard to leverage its internally developed applications software. It uses SORBUS for equipment maintenance. SCT apparently has no special arrangements for disaster recovery services.

EXHIBIT SCT-2

Distribution of Revenue

Contract Type	1989 (Percent)	1992 (Percent)
Fixed Price	25	50
Time and Materials	75	50

SCT has identified proprietary products that give it an edge in bidding systems operations contracts. SCT has developed 4GL custom application software using Oracle systems software. The products are for the education and state and local government vertical markets, and often are the key differentiators in bids in these industries.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT SCT-3

Capabilities

Internal and Alliances	None
Internal Only	• Business Consulting • Computer Systems Operations • Network Management • Applications Design/Development • Packaged Applications Software
Alliance Only	• Equipment Maintenance
Neither Internal nor Alliance	• Disaster Recovery Service

4. Markets Served

Currently, SCT derives its systems operations business from the education sector, as well as from state and local government clients. SCT has currently a wide range of contracts with revenues averaging around $1 million annually. It focuses primarily on educational institutions, with about 60% of its total revenues derived from colleges, universities, and other educational institutions.

Currently, SCT has no federal systems operations business. Further, there is no indication that it intends to pursue the federal marketplace.

5. Competitive Position

SCT has been providing systems operations support in the educational, and state and local government markets for 21 years. It does not break out systems operations revenues separately. However, as already reported, SCT realized $44 million in 1989 revenues, and INPUT estimates that 85% came from systems operations. As SCT grows its systems operations business, it expects its primary competition to come from the following firms: Maxima, Communications Management Systems, Inc., Information Association, and American Management Systems, Inc.

© 1991 by INPUT. Reproduction Prohibited.

6. Recent Events

In the past year, SCT has made a substantial investment to position its services business to take advantage of the growing trend toward outsourcing. This investment included a new name—OnSite—and a marketing strategy that positions these services as "the computing management alternative" for higher education and government, as well as related markets. The new positioning established SCT's OnSite services as a solution for the critical challenges in its markets in the 1990s: higher costs, budget constraints, changing demographics, and pressure to provide more services while holding the line on spending.

In its software business, SCT has rounded out its line of administrative applications with the introduction of Financial Aid and Human Resources Systems. Financial Aid is a pivotal product in the higher education market because the issue of financial aid affects nearly every college and university student. These products join SCT's Study, Finance and Alumni/Development systems to form a comprehensive administrative product line. SCT also recently introduced its Finance and Human Resources products into the local government marketplace. The Company has announced IntelliQuest™, a natural language query system that allows its BANNER clients to access information from their administrative data bases using plain English queries.

7. Organization

SCT is currently organized into two operating divisions, as described in Section 2.

In addition to the headquarters office, SCT maintains regional offices in Irvine, and Sacramento, CA; Dallas, TX; Cleveland, OH; and Hato Rey, Puerto Rico. SCT currently has 725 employees engaged in systems operations activities. The bulk of this staff is engaged in four areas:

- Applications Design and Development: 30%
- Project Management: 25%
- User support: 25%
- Technical Support: 20%

8. Systems Operations Alliances

As discussed earlier, SCT has no formal alliance programs for systems operations. However, SCT has used DEC, Hewlett-Packard and Sequent as platforms for SCT software, and Sorbus for equipment maintenance.

© 1991 by INPUT. Reproduction Prohibited.

INPUT believes that as SCT increases its systems operations activities, alliances with other companies will play an important role.

9. Systems Operations Marketing Strategy

SCT expects to expand its systems operations business from both its existing client base as well as through new accounts. However, this latter thrust is expected to account for only 10% of new business. The balance will come from existing customers.

SCT expects to receive approximately 10% of its new systems operations business through formal solicitation. Sixty percent of new business, as expected by SCT, will come from direct sales activity. Additionally, SCT expects 30% of new business to come from new contracts with existing clients. This is consistent with its overall plans to expand the contracted work within its current client base.

SCT views itself as being a leading supplier of systems operations activities within its focused markets. The company expects this view to give them a competitive edge when competing for systems operations contracts in these markets.

10. Systems Operations Customer Base

SCT currently has 22 commercial clients and 18 state and local government clients for systems operations services. Among its listed clients are:

- Cuyahoga Community College, Ohio
- Temple University, Pennsylvania
- Tulare County, California
- Cal-Tech, California

As the systems operations market continues to evolve, SCT will enter additional vertical markets when it can leverage its current software product investment.

11. Summary and Future Directions

Over its 23 years of providing services to the educational sector and state and local governments, SCT has developed a leadership position, providing systems operations services based on tested applications software packages. INPUT expects SCT's systems operations business to grow slowly but steadily over the next few years, reflecting overall business conditions.

© 1991 by INPUT. Reproduction Prohibited.

COMPANY PROFILE

Ziff Information Services (ZIS)

1. Key Systems Operations Contracts

The commercial and federal systems operations activities of Ziff Information Services are under the direct supervision of Thor Olson, President of Ziff Information Services (ZIS). He is located at

10 Presidents Landing
Medford, MA 02155

2. Description of Principal Business

Ziff Information Services was founded in 1979 by Ziff Publishing Company, which is now known as Ziff Communications Company. Ziff Communications has over 50 years experience as one of the top business and commercial publishers in the U.S.

Ziff Information Services specializes in assisting companies in making large amounts of information available on-line either through third-party suppliers or through Ziff facilities.

3. Systems Operations Service Characteristics and Capabilities

Ziff Information Services has over 12 years experience in the commercial systems operations market.

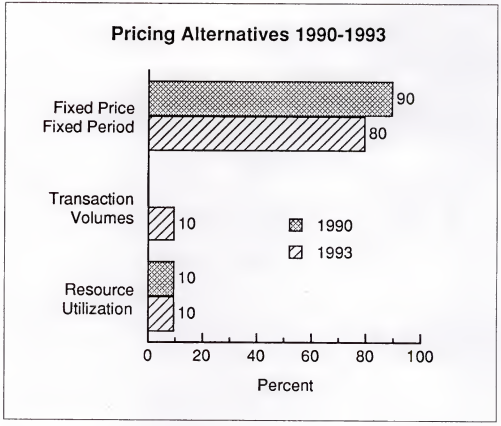
The company currently operates five client-owned data centers and one company-owned data center. In 1990 Ziff obtained 95% of its revenue from company-owned facilities and equipment dedicated to, in most cases, a single client. In 50% of the contracts the applications software was developed in-house while 5% was developed by a third party.

Ziff believes these ratios will remain relatively stable through 1993 with only a 5% margin of change, since it expects new clients to opt for processing at Ziff's site or on equipment owned by Ziff.

Most of its contracts, approximately 70%, are from three to four years in length, while 20% last over five years. Exhibit Ziff-1 lists how Ziff's pricing alternatives will change from 1990 to 1993.

© 1992 by INPUT. Reproduction Prohibited.

EXHIBIT ZIFF-1



4. Markets Served

Ziff currently provides systems operations services to 12 commercial clients. The average annual contract value is approximately $500,000.

Exhibit Ziff-2 identifies the distribution of contract product and services revenues. Note that 60% of the revenues are derived from processing services on DEC equipment, with the other components being provided equally by application software and professional services. This indicates that ZIS is primarily a platform operations vendor, as currently configured.

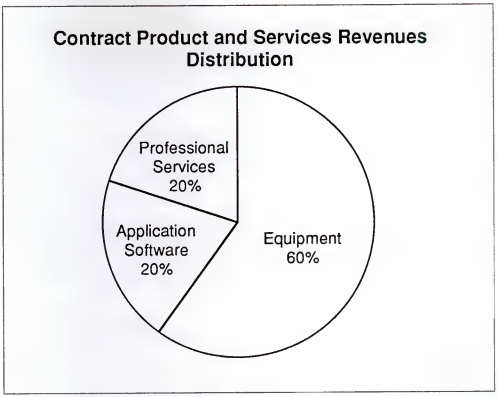
5. Competitive Position

Ziff Information Services has been active in the commercial systems operations arena for 12 years. The company considers its only commercial competitor to be the client's internal Information Systems Group.

Historically, most of ZIS' systems operations business has come from the financial services and banking industries, industries where the dissemination of large amounts of information on an on-line basis is critical. This is a particular area of expertise at Ziff Information Services.

© 1992 by INPUT. Reproduction Prohibited.

EXHIBIT ZIFF-2



6. Organization

Systems operations is a major line of business for the Information Services Group. Ziff has allocated 45% of its commercial employees to systems operations.

Ziff also stated that it has not yet hired the employees of the companies with which it has contracts. However, it is fully prepared to do so in the appropriate marketing situation.

Exhibit Ziff-3 identifies the company's systems operations staff capabilities. Over 50% of the staff is assigned to client interface functions; i.e., technical support and user support. Another 25% is dedicated to system and network operations, indicating a large component is directly involved in client operations on a day-to-day basis.

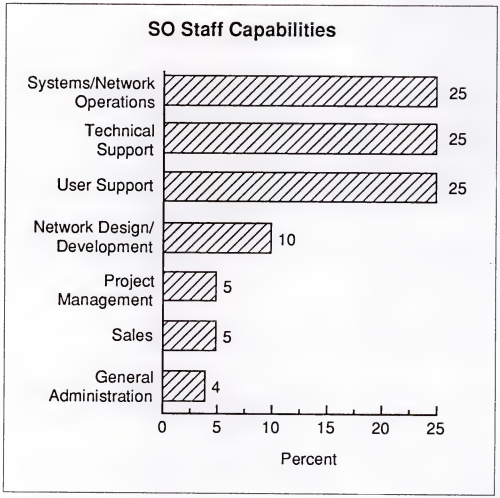
7. SO Alliances

Ziff Information Services indicates that it does not yet have a formal alliance program for systems operations. It does, however, indicate that it establishes non-competitive alliances with other SO companies such as IBM, DEC, and other third-party DEC application software developers.

The company also indicates that it solicits alliances with companies to obtain the following capabilities:

© 1992 by INPUT. Reproduction Prohibited.

EXHIBIT ZIFF-3



- Computer systems operations
- Network management
- Applications design/development
- Applications maintenance

8. SO Marketing Strategy

Ziff indicates that approximately 50% of tis new contracts are a result of proactive sales activity, while the other 50% is solicited from existing clients. While the company has traditionally focused on systems operations vertical markets, primarily financial and banking, it plans to expand into functional markets as well by providing a full range of applications software and services.

© 1992 by INPUT. Reproduction Prohibited.

9. SO Customer Base

In January 1992 Ziff announced an agreement with SEC online to provide processing and maintenance of a host service. Under this agreement full text data from SEC online will be available to businesses via a private online host service using ZIS' electronic publishing software. SEC online consists of business and financial information contained in reports filed by over 2,000 companies.

In February 1992 ZIS announced that it will provide processing and maintenance of a host service for Dun & Bradstreet's Market Identifiers. Under the agreement Dow Jones news/retrieval customers using Duns Market Identifiers will access the information through a transparent gateway for Dow Jones News Retrieval to ZIS' Medford, MA VAX computing center where the database is maintained.

Ziff's largest client is a well-known purveyor of federal logistics information. Under this agreement, ZIS provides platform and network operations. All of its software resides on Ziff systems.

Another client is a large financial software company, which has contracted Ziff to provide computer operations and software development as well as communications support.

Ziff currently operates an on-line election campaign financial information system for the Federal Election Commission.

10. SO Summary and Future Direction

Ziff Information Services has been providing a unique service offering as a DEC-based systems operations outsourcing vendor. It has also been responsible for providing internal processing to Ziff Communications, its parent organization. Recent changes in emphasis indicate that Ziff is becoming more aggressive in its pursuit of the DEC-based outsourcing opportunities. As the outsourcing market grows in general, the DEC-based portion should grow proportionately. Ziff's strong presence bodes well for future revenue growth.

© 1992 by INPUT. Reproduction Prohibited.

INPUT LIBRARY

VI

Summary and Recommendations

This report examined the systems operations market from the vendor's viewpoint. It classified vendors in order to better analyze their motivating forces and determine their emerging strategies. A look at their organizations and capabilities helped define what makes a successful systems operations vendor. The emerging trends and issues in the marketplace were also considered, since these will affect how the vendors change to adjust to new market demands.

A

Vendor Classification

Participants in the systems operations market have their origins in a variety of information services markets. Exhibit VI-1 summarizes the four classes of vendors that have emerged. All of them saw the systems operations market as a natural follow-on to their existing business, but not for all the same reasons.

EXHIBIT VI-1

Vendor Classifications

Category	Motivation
Professional Services	Systems integration follow-on
Processing Services	Expansion of remote processing
Equipment Manufacturer	Protection of distribution channels
Others	Leveraging of functional expertise

© 1991 by INPUT. Reproduction Prohibited.

Professional services firms have naturally entered the market either as a follow-on to consulting, program development, or systems integration activities, or as a natural outgrowth of other professional services engagements where they were providing personnel to operate client-owned and -managed data centers.

Processing services companies began looking for new markets when their traditional timesharing business was rapidly eroded by increased PC usage and increases in departmental computing. While remote processing services supplemented some of these losses, system operations offered opportunities for exciting new growth.

Hardware manufacturers are newer arrivals in the systems operations market who see it as a required strategy to provide a broader range of services to their clients and, in the process, protect their channels of distribution for equipment.

"Other" companies have seen the systems operations market as a means of leveraging their in-house base of expertise and equipment by expanding the services they provide to their own market segment. While the "other" companies included in this initial study are banks, firms with other industry sectors also participate in the systems operations market.

B

Driving Forces

Respondents to INPUT's surveys indicate the market is being shaped by both user requirements and the actions that vendors take in response to these requirements. Users are clearly asking the vendor to share the business risk with the client by not only assuming ownership of the equipment at the client site, but also, in many cases, absorbing the information processing operations staff. The resulting relationships are beginning to be called partnerships by vendors and users alike.

To compete effectively and to maintain favorable operating margins, vendors need substantial financial resources and a management staff that can operate data centers efficiently, taking advantage of technological advances and economies of scale.

Vendors need to supplement their own resources with alliances with other information services vendors that provide services that complement their own capabilities.

All of these forces are further affected by the economic conditions under which the market exists. Currently, the recession is increasing the importance of cost savings and capital preservation and has become an additional motivator for those considering systems operations as an alternative. This comes on the heels of a period of mergers and consolidations that resulted in excess capacity in some companies, and spin-offs without processing capabilities in others.

© 1991 by INPUT. Reproduction Prohibited.

C

Vendor Organizations

The size and structure of systems operations vendors varies considerably. Companies surveyed ranged in size from 150 to over 16,000 employees. Several reported to INPUT that they are matrixed organizations, a structure that allows them to more effectively transfer the resources to where the need exists.

1. Financial Characteristics

Vendor respondents did indicate that their before-tax margins ranged between 8% and 12%. The majority felt the operating margins were decreasing in the federal market and still increasing in the commercial market.

2. Capabilities and Products

The vendors have the products to meet their prospects' requirements. In a vertical industry setting, that includes either a staff with industry-specific expertise or industry-specific software, or both. All successful vendors must demonstrate a proven capability in the prospect's industry.

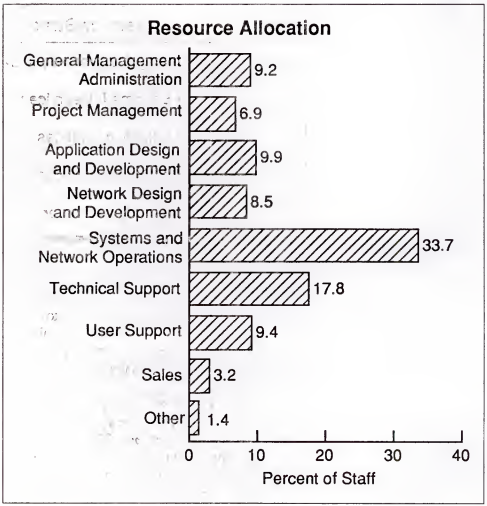
In addition, the vendor must deploy his staff to maximize its effectiveness. All of the firms allocated the bulk of their SO resources to supporting systems and network operations. The percentage distribution of personnel for all major systems operations functions is illustrated in Exhibit VI-2.

Technical expertise—including computer systems operations, network management, and technical support—are critical capabilities for vendors who intend to grow in the market. Vendors have a higher probability of success when they have the capability to participate in the implementation already on board.

In terms of products, proprietary products—particularly industry-specific applications software products, and operations management techniques—offer an advantage over the competition. Unique technologies and applications software, and the ability to apply them, are clearly able to be leveraged and offer the vendor the opportunity to penetrate targeted vertical industry markets.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT VI-2



D

Vendor Strategies

A number of vendor strategies, summarized in Exhibit VI-3, have evolved as a result of market conditions and user requirements.

Companies in transition are defined as organizations undergoing major changes. Companies going through change can be:

- Fast-growing companies
- Organizations in divestiture/buy-out deals
- Firms going through consolidations

There are also other prospects being targeted by systems operations vendors, but the above types of companies have requirements that find systems operations attractive.

© 1991 by INPUT. Reproduction Prohibited.

EXHIBIT VI-3

To provide full service, vendors have to demonstrate that they have all the capabilities in place or readily available from another allied vendor. They also must frequently demonstrate their track record in the particular vertical market or functional area.

Most vendors cannot afford to be all things to all users. The developing solution, one seen first in the systems integration market, is to form alliances with other vendors. These alliances are used by the prime vendor to supplement capabilities that might be in short supply within the company, but which are key to success with a particular prospect. Exhibit VI-4 presents some typical capabilities that vendors frequently seek from outside firms. Some of these are industry specific, while others require specialized experience or equipment.

EXHIBIT VI-4

Alliances Provide Capabilities

Capability	Percentage of Companies Using Alliances
Equipment Maintenance	70
Disaster Recovery Service	80
Packaged Software Applications	60
Applications Maintenance	50

© 1991 by INPUT. Reproduction Prohibited.

It is increasingly important that the vendor be willing to take over the equipment and personnel of the client as part of the systems operations contract. Users are anxious to divest themselves of the capital equipment and human resources in order to further reduce operating costs. Beyond the acquisition of the assets, the vendor has to become an integral part of those business decisions that affect the information processing requirements of the client. Both parties to the agreement are best served when this occurs.

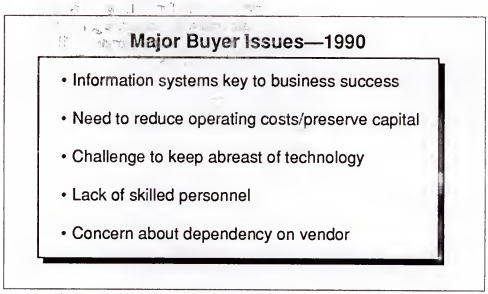
The term partnership is used more frequently to describe the relationship. Though it may sound like a nice marketing expression, vendors and users agree that a partnership must happen for the dependence of the user on the vendor to be healthy and free from litigation.

E

Issues and Trends

Several trends are developing in the systems operations market that are outlined in Exhibit VI-5. The concept of a partnership is becoming accepted as vendors and users negotiate how the process will work. As vendors invest in equipment and facilities for the client, and assume responsibilities for staff over an extended contract period, mutual respect and trust will be required.

EXHIBIT VI-5


Major Buyer Issues—1990
• Information systems key to business success
• Need to reduce operating costs/preserve capital
• Challenge to keep abreast of technology
• Lack of skilled personnel
• Concern about dependency on vendor

Corporate management is finding that much of its attention is being diverted to information systems problems rather than more fundamental operational issues. Most executives recognize the importance of information systems to the health of their businesses, yet don't understand how to manage that part of the operation. INPUT believes more managers will decide to entrust systems operations to outside experts as information technology continues to increase in complexity.

© 1991 by INPUT. Reproduction Prohibited.

Management prefers to rely on vendors to keep current with the state of technology. These vendors have a strong incentive to improve their own operating efficiency and applying the latest processing technology is a good approach to achieving that end.

As business conditions change, companies also need to change rapidly. The rapid downsizing of the oil drilling industry, with its subsequent effect on staff and budgets, is a good example. Many firms in that sector turned to systems operations firms to eliminate large data centers they no longer needed. These same firms found they were able to preserve capital or improve cash flow rapidly in this manner.

Skilled information services personnel are becoming harder to acquire and more difficult to retain. Certain industries, because of their depressed wage structures, are finding it difficult to attract personnel. Others are finding that staff with expertise in certain disciplines are in short supply, particularly those with communications technology expertise. By using outside vendors, existing expertise can be leveraged across several clients.

Outsourcing of systems operations leaves the buying firm dependent on an outside vendor for information that is crucial to the continued successful operation of that firm. If systems operations is to be a viable alternative, vendors must demonstrate genuine interest in clients' business successes, and must demonstrate a willingness to participate as a partner in the client's business.

Recommendations

The systems operations market continues to grow at an attractive rate. It has brought success to many of the early participants and is currently attracting new participants as information services firms seek to protect client relationships and leverage their existing resources.

This market will require the vendors to operate in new and creative ways. INPUT's recommendations are shown in Exhibit VI-6.

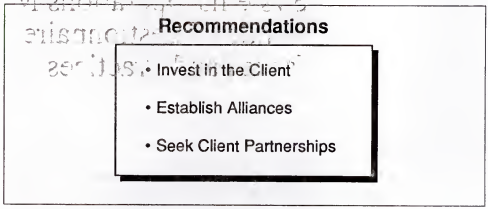
- Vendors should be prepared to assume more financial risks and invest in their clients. These investments can take the form of equipment and software technology, or even facilities, on or near the clients' sites. In addition, it may be necessary to invest in the prospective clients' businesses. Access to investment capital will be essential to grow with the systems operations market.

- Few vendors have all the resources and capabilities to meet evolving systems operations clients' needs. Vendors should take steps to supplement existing capabilities with alliances that allow them to provide a broad range of competitive services and present a full-service vendor image.

© 1991 by INPUT. Reproduction Prohibited.

- Prospective clients are looking for more than service suppliers. They are looking for vendors who will enter into a long-term partnership with them, and who are committed to their (the client's) success. Vendors need to learn how to be partners with their clients.

EXHIBIT VI-6



The successful vendor in the next few years will master these changes in operating style and participate fully in this growing information services market segment.

© 1991 by INPUT. Reproduction Prohibited.

Systems Operations Management Vendor Questionnaire Issues and Practices

Background/Strategy

1. How long has your company been in the systems operations (SO) business (also called facilities management (FM) or operations management (O&M))? ____ (years)

2. If you participate in both the commercial and federal systems operations markets, please indicate how long you have participated in each.

   Commercial ___ (years) Federal ___ (years)

3. There are a number of characteristics that describe a vendor's systems operations business. One might be the percent of total revenue your firm derived from systems operations on equipment your firm owns, versus on client-owned equipment. For each of the following, please provide the percent of revenue derived for the alternatives listed in 1989 (in Column 1) and what you believe it will be 1992 (in Column 2).

	Percent of Revenues Column 1 1989	Column 2 1992
a. Equipment owned by:		
The client	___	___
You, the vendor	___	___
TOTAL	100	100
b. Operations located:		
On client premises	___	___
In a facility you own	___	___
TOTAL	100	100
c. Equipment dedicated:		
To a single client	___	___
Shared among multiple clients	___	___
TOTAL	100	100

© 1991 by INPUT. Reproduction Prohibited.

d. Application software developed by:

The client	___	___
Your company	___	___
A third party	___	___
TOTAL	100	100

4. In how many data centers does your organization provide systems operations services? Please provide responses for both client-owned and vendor-owned data centers.

_____ Number of client-owned data centers
_____ Number of data centers your company owns

5. Please provide an estimate in Column 1 of the percent of your current contracts under each of the pricing alternatives listed below. In Column 2, give an estimate of this mix in 1992.

	Percent	
	1989	1992
Fixed price for a fixed period	___	___
Charges based on transaction volumes	___	___
Charges based on resource utilization	___	___
Cost plus a predefined margin	___	___
Other (Specify):_____	___	___
_____	___	___
Combinations (Specify):_____	___	___
_____	___	___
TOTAL	100	100

6. What percent of your commercial and federal systems operations contracts have durations in the ranges listed below?

	Percent	
	Commercial	Federal
1 to 2 years	___	___
3 to 4 years	___	___
5 to 8 years	___	___
Over 8 years	___	___
TOTAL	100	100

© 1991 by INPUT. Reproduction Prohibited.

Organization and Responsibilities

7. Is systems operations your major line of business, or is your organization a subsidiary or separate division of a company that offers other products and/or services?

SO is major line of business ___
Subsidiary ___
Division ___

7a. If a subsidiary or division, please identify your parent firm and describe the major services or products it offers.

Name/Description: _____

8. Please give the name and title of the top executive in your systems operations organization. If commercial and federal systems operations are separate, please provide the requested information for both.

	Commercial	Federal
Name	_____	_____
Title	_____	_____
Address	_____	_____
	_____	_____

9. If systems operations is operated as a subsidiary or separate division, to whom does it report in the parent organization?

Name _____
Title _____

10. Would you provide an organization chart for your systems operations organization?

____ Yes/No. If yes, please include the organization chart with this questionnaire when you return it to INPUT.

11. How large a staff do you currently employ in your systems operations business? If commercial and federal businesses are separate, please identify the percent of personnel allocated to each.

	Percent
Total full-time SO staff	___
Percent commercial	___
Percent federal	___

© 1991 by INPUT. Reproduction Prohibited.

12. The following table identifies key staff capabilities required by systems operations firms. Please indicate the percentage of your total staff associated with each category.

Capability	Percent
General management & administration	____
Project management	____
Applications design and development	____
Network design and development	____
Systems and network operations	____
Technical support	____
User support	____
Sales	____
Other (Specify) _____	____
TOTAL	100

Current Customer Base

13. Approximately how many customers do you currently provide systems operations services to?

Commercial ___ Federal ___

14. What is the average annual contract value?

Commercial ___ Federal ___

15. What is the rough distribution of the products and services costs in your company's systems operations contracts? (Column entries should add to 100%.)

	Percent of Contract Value
Professional services	____
Equipment	____
Application software	____
Systems software	____
Other (Specify)_____	____
TOTAL	100

© 1991 by INPUT. Reproduction Prohibited.

16. Please name three or more systems operations clients and briefly describe the type of service you are providing them?

1. _____

2. _____

3. _____

4. _____

5. _____

Financial Characteristics

17. Please complete the following revenue table.

Business Segment	Revenues ($M) 1988	1989
Commercial systems operations	___	___
Federal systems operations	___	___

18. What do you estimate as the compound annual growth rate (CAGR) for the systems operations industry over the next 5 years?

Commercial ___% Federal ___%

19. Are systems operations margins increasing (I) or decreasing (D)?

Commercial ___(I/D) Federal ___(I/D)

20. What have been the recent before-tax profit (loss) margins for your systems operations business?

Commercial ___% Federal ___%

© 1991 by INPUT. Reproduction Prohibited.

Strategy and Markets

21. Are there specific markets on which you focus your systems operations activities? Are these vertical industry, functional or other markets?

Vertical ___
Functional ___
Other ___

22. Please list target vertical, functional or other markets.

23. Does your current strategy include expansion in your existing market(s) and/or entry into new vertical or functional markets?

Expansion in current market(s) _____ (Y/N)
Entry into new markets _____ (Y/N)

24. What selection criteria do you use for identifying new target markets?

25. What percent of your annual systems operations business comes from your current base, as opposed to new accounts?

	Percent	
	Commercial	Federal
From existing client base	___	___
New accounts (solicited for SO)	___	___
Other (Specify)_____	___	___

© 1991 by INPUT. Reproduction Prohibited.

26. What percent of your new contracts are a result of the following:

	Percent	
	Commercial	Federal
Responding to bid solicitations or RFPs	___	___
New contracts with existing clients	___	___
Proactive direct sales activity	___	___
Other (Specify)_____	___	___

27. How does your company position itself with prospects regarding customer benefits, skills, capabilities, and differences from competition?

28. Who do you consider your primary competitors in the systems operations business?

Commercial	Federal

Capabilities/Products

29. The following list identifies major capabilities that may be involved in delivering systems operations services.

Please indicate in Column 1 if your organization has the capability (Y for yes and N for no). In Column 2, indicate (Y or N) if you use alliances or partnerships with other companies to provide this capability.

	Col 1 Exists	Col 2 Alliances
Business Consulting	___	___
Computer Systems Operations	___	___
Network Management	___	___
Applications Design/Development	___	___
Applications Maintenance	___	___
Packaged Applications Software	___	___
Disaster Recovery Service	___	___
Equipment Maintenance	___	___
Other (Specify):_____	___	___

© 1991 by INPUT. Reproduction Prohibited.

30. Do you have any formal alliance program for systems operations? _____(Y/N)

31. Briefly describe how you use alliances to support your company's systems operations business.

32. Please identify any alliances that your company has established for the systems operations business and the purpose of these relationships.

Company	Purpose of Relationship

33. Are there particular proprietary technologies, products, or services that you believe give your firm a competitive advantage when bidding for a systems operations contract? _____(Y/N)

34. If you have proprietary systems operations technologies, products, or services, please identify them below and describe the advantage they provide.

Product/ Technology/ Service	Advantage Description

35. What major trends in the user community do you believe are motivating growth in the systems operations market?

36. On a scale of 1-5, please indicate the degree of concern that prospective clients have about issues related to the placement of their staff (1 = no or little concern, 5 = very high concern)
_____ Rating

© 1991 by INPUT. Reproduction Prohibited.

37. Considering staff issues, please estimate the percent of the client's staff that are typically retained as part of the management contract.

_____ Percent retained

38. Considering the staff that is retained, please provide a ranking of the top three (3) types of expertise that you try to retain. The ranking should reflect your order of preference.

_____ General management
_____ Project management
_____ Applications design and development
_____ Systems programming
_____ Network design and development
_____ Systems operations
_____ Network operations
_____ Technology planning
_____ User support
_____ Other (Specify) _____

39. Do you generally help a client place personnel that will be released when implementing an SO contract?

_____ Yes
_____ No

40. Please indicate which of the following describe the types of performance incentive that you typically provide for management and technical staff. (Check all that apply).

	Management	Technical
Profitability	_____	_____
Staff productivity	_____	_____
Application integrity	_____	_____
System performance	_____	_____
Customer relations	_____	_____
Client satisfaction	_____	_____
Other (Specify)_____	_____	_____

41. Are performance incentives generally included as part of a contract with your customers?

_____ Yes
_____ No

42. How do you measure client satisfaction?

_____
_____
_____

43. Do you agree that future vendor-client relationships will be *partnerships* in nature?

_____ Yes
_____ No **(Skip to 45)**

© 1991 by INPUT. Reproduction Prohibited.

44. Please describe a *partnership* relationship in your own words.

45. Please describe how you ensure that there is ongoing management communication between your company and your client's management. (How frequently do you communicate and in what form? Are your communications formal or informal? Do you meet weekly, monthly, etc.?)

© 1991 by INPUT. Reproduction Prohibited.